AMF® REECE

Better Ideas, Better Made

MODEL EBS Mark II

ELETRONIC BUTTON STITCHER MACHINE

PARTS AND SERVICE MANUAL

MACHINE SERIAL No:

PART NUMBER 97.7100.0.000

This manual is valid from the machine Serial No.: L710004

AMF je obchodní značka skupiny podniků AMF, Inc.

01/2009

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LIMITED WARRANTY ON NEW AMF REECE EQUIPMENT

Warranty provisions:

A ninety (90) day limited service labor warranty to correct defects in installation, workmanship, or material without charge for labor. This portion of the warranty applies to machines sold as "installed" only.

A one (1) year limited material warranty on major component parts to replace materials with defects. Any new part believed defective must be returned freight prepaid to AMF Reece, Inc. for inspection. If, upon inspection, the part or material is determined to be defective, AMF Reece, Inc. will replace it without charge to the customer for parts or material.

Service labor warranty period shall begin on the completed installation date. Material warranty shall begin on the date the equipment is shipped from AMF Reece, Inc.

Exclusions:

Excluded from both service labor warranty and material warranty are: (1) Consumable parts which would be normally considered replaceable in day-to-day operations. These include parts such as needles, knives, loopers and spreaders. (2) Normal adjustment and routine maintenance. This is the sole responsibility of the customer. (3) Cleaning and lubrication of equipment. (4) Parts found to be altered, broken or damaged due to neglect or improper installation or application. (5) Damage caused by the use of non-Genuine AMF Reece parts. (6) Shipping or delivery charges.

There is no service labor warranty for machines sold as "uninstalled".

Equipment installed without the assistance of a certified technician (either an AMF Reece Employee, a Certified Contractor, or that of an Authorized Distributor) will have the limited material warranty only. Only the defective material will be covered. Any charges associated with the use of an AMF Reece Technician or that of a Distributor to replace the defective part will be the customer's responsibility.

NO OTHER WARRANTY, EXPRESS OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, and FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER IS GIVEN BY SELLER OR SELLER'S AGENT IN CONNECTION HEREWITH. UNDER NO CIRCUMSTANCES SHALL SELLER OR SELLER'S AGENT BE LIABLE FOR LOSS OF PROFITS OR ANY OTHER DIRECT OR INDIRECT COSTS, EXPENSES, LOSSES OR DAMAGES ARISING OUT OF DEFECTS IN OR FAILURE OF THE EQUIPMENT OR ANY PART THEREOF.

WHAT TO DO IF THERE IS A QUESTION REGARDING WARRANTY

If a machine is purchased through an authorized AMF Reece, Inc. distributor, warranty questions should be first directed to that distributor. However, the satisfaction and goodwill of our customers are of primary concern to AMF Reece, Inc. In the event that a warranty matter is not handled to your satisfaction, please contact AMF Reece office:

Prostejov, Czech Republic
Phone: (+420) 582-309-275
Fax: (+420) 582-360-608
e-mail: service@amfreece.cz

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Warranty Registration Card

(Please Fax or Mail immediately after installation)

Note: All Warranty Claims Void, unless Registration Card on file at AMF Reece HQ

Machine model number:
(S101, S100, S104, S311, Decostitch, S4000 BH, EBS, EBS Mark II, etc)

Manufacturer‘s serial or production number:

Installation Site Information:

Customer‘s Name:

Customer‘s Mailing Address:

Customer‘s Telephone Number:

Supervising Mechanic‘s or Technician‘s Name:

Signature of Supervising Technician:

AMF Reece Technician‘s Name:

AMF Reece Technician‘s Signature:

Type of garment produced at this location?

Average Daily Production Expected from this machine?
(number of buttonholes, jackets sewn, pants produced, buttons sewn, etc)

Any special requirements required at this location?

What other AMF Reece Machines are at this location?

How can we serve you better?

Tovární 837, 796 25 Prostejov, Czech Republic
Fax: +420 582 360 606, e-mail: service@amfreece.cz, website: www.amfreece.com

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A - INTRODUCTION

1. GENERAL INFORMATION

EBS Mark II ***sewing machine is intended for sewing buttonholes on outwear.*** It has been designed and manufactured to be reliable and easy to operate. Special attention is paid to ensure ease and effective safety for machine operators and servicemen.

Safety mechanisms protect both, operators and the machine, and respect valid safety and hygiene provisions for usual technological usage of the machine. Those safety mechanisms contain electrical plug, operation switch (circuit breaker) and covers ensuring safety operation on the machines; only if they are fitted onto the machine correctly.
There are information labels on the machine to point out additional danger. Do not remove or damage those labels. In case of damage, order a new one. Mentioned warnings cannot cover all safety aspects and therefore it is very important for an operator to read this manual carefully and understand it well before he starts operating the machine. It will also eliminate errors during machine installation and its operation. Do not put the machine into operation unless you have read entire manuals supplied with the machine and have understood each function and procedure.

There are four categories of safety instructions in this manual:

DANGER! Ignoring instructions may endanger operator's life.

CAUTION! Ignoring instructions may cause a serious injury of the operator or damage the machine.

WARNING! Ignoring instructions may cause damage on the machine or injury of the operator.

NOTICE! Breaking procedures may cause functional problems of the machine.

We recommend that servicemen from AMF Reece supervise the installation of the machines and initial training of your mechanics and operators.
The most effective method ensuring safety of operators working on the machine is a strict safety program including instructions for safety operation. Operators and servicemen should wear safety glasses.

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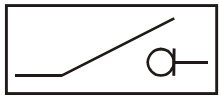
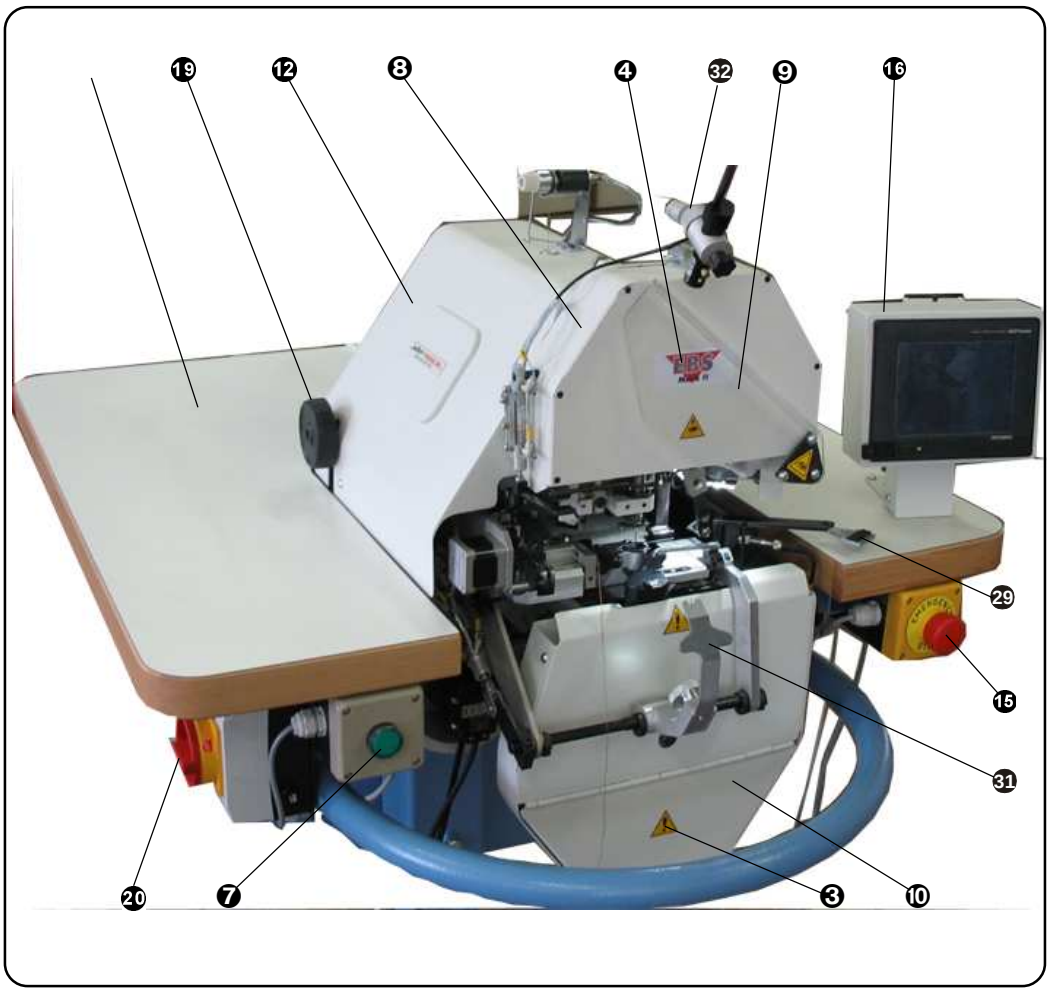
Phones: +420 582 309 146 (Service), +420 582 309 286 (Spare Parts); Fax: +420 582 360 606

A - INTRODUCTION

2. SECURITY LABELS AND ARRANGEMENT

❶ Cover removed-warning, electric currentpossible injury
❷ Danger - possible injury
❸ Covers removend, possible injury
❹ Machine logo
❺ Grounding
❻ Rotation direction
❼ Start button
❽ Removable needle bar cover
❾ Eye-guard cover
❿ Looper cover
⓬ Main drive cover emergency
⓯ Emergency stop button
⓰ Display
⓴ Main power switch

❶
❷
❸
❺
❻
⓴ 



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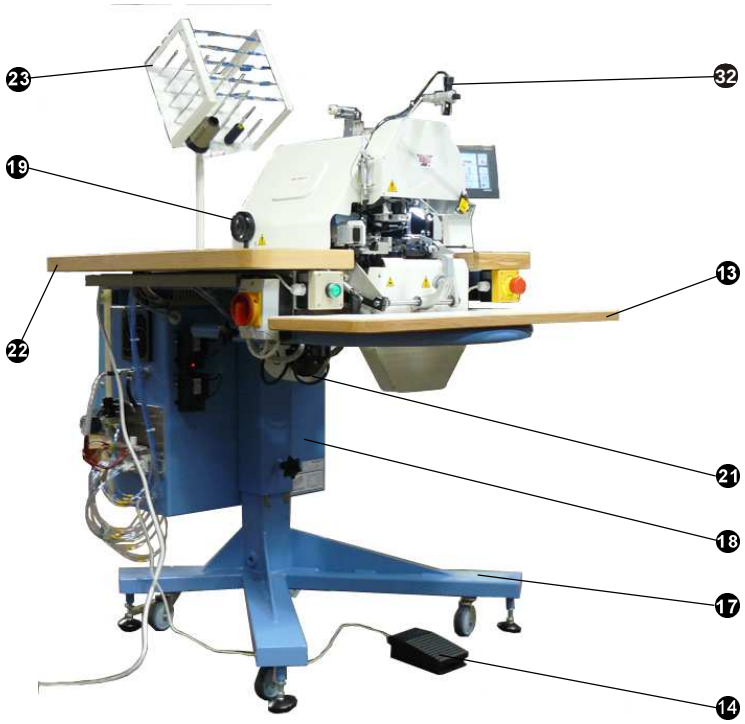
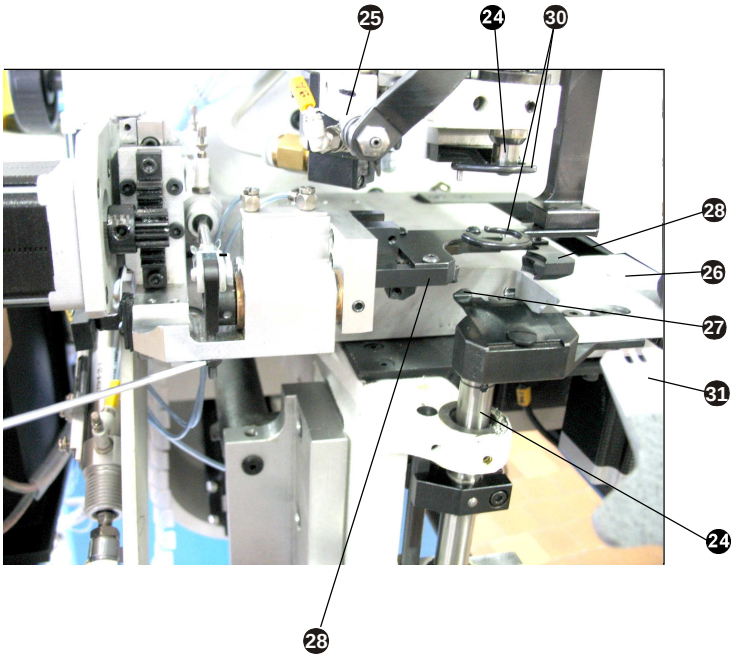
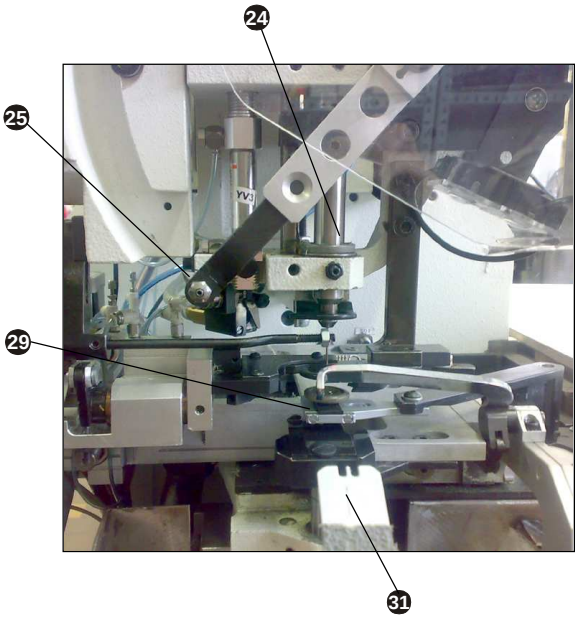
A - INTRODUCTION

3. TERMINOLOGY OF MACHINE PARTS

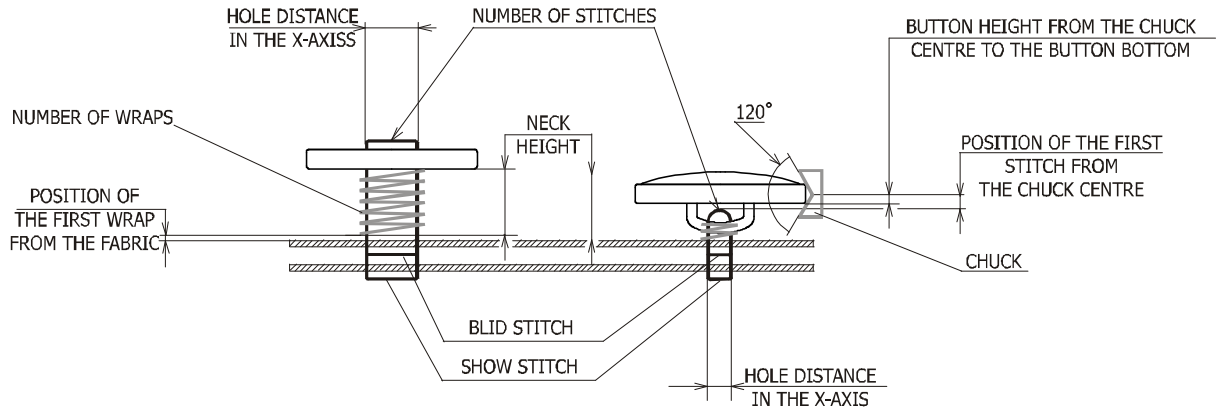
⓭ Lower - level desk
⓮ Foot pedal
⓱ Stand
⓲ Electro box
⓳ Hand wheel
㉑ Motor
㉒ Table
㉓ Thread stand
㉔ Needle bar
㉕ Looper (upper/lower)
㉖ Bedplate
㉗ Pucker pin
㉘ Chuck
㉙ Button loader
㉚ Thread tension mechanism
㉛ Tongue
㉜ Marking light



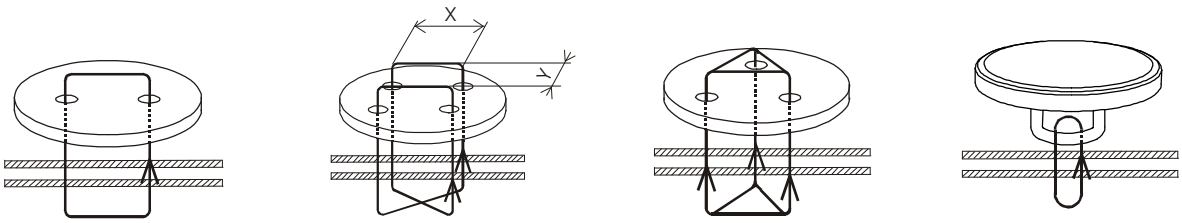




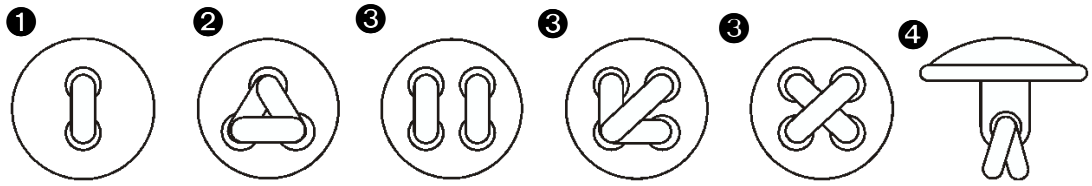
4. USED TERMINOLOGY



When selecting and sewing styles:



Button types and sewing styles:



All buttons are sewn with hand stitching:

❶ 2 - hole buttons

❷ 3 - hole button

❸ 4 - hole button

❹ Shank button

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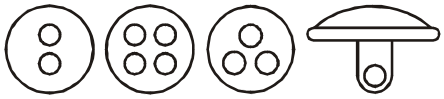
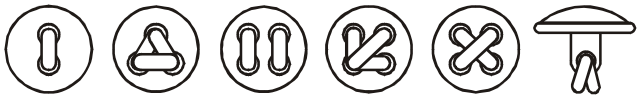
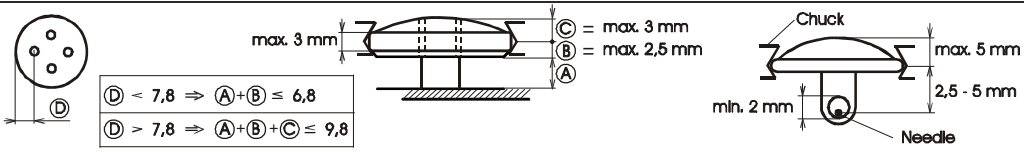
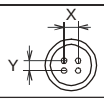
A - INTRODUCTION

5. TECHNICAL CONDITIONS

Specifications	
Application	Electronic button sewing and wrapping machine sewing with hand stitching technology
Stitch type	Hand stitching with floating needle
Sewing speed	100 - 200 rpm; adjustable in increments of 5 rpm
Button type	
Sewing style	
Button parameters	14 - 26mm
Button height	
Hole distance 	Axis X: 3 - 6 mm
	Axis Y: 3 - 6 mm
Neckt height	0 - 8 mm
Number of stitches	1 - 14
Number of wraps	0 - 30
No. of first, final “locking” stitches	0 - 3
Stitch depth	0 - 3 mm
Stitch option	Overlaping, alternating
Memory	99 patterns
Automatic cycle mode	20 cycle modes; 1 cycle mode = 20 differen button patterns
Manual cycle mode	20 cycle modes; 1 cycle mode = 2 different button patterns activated by pedal
Thread length	max. 550 mm
Thread trimming ✂	Pneumatic
Threading	Pneumatic
Thread tension	1 - 20
Recommended threads	Polyester thread 30, 40, 50, 70, Rice waxed thread size 3, 4, 5
Needle system	AMF REECE 2000A-38 (100 Nm)
Control panel	Colored touch screen display
Marking light	LED diod
Sewing light	LED diods
Button feeding	Manually; different button loaders according to button type
Operating condition	Acording to IEC 364-3, IEC 364-5-51; temperature from +5℃ to 40℃, relative air humidity from 30 to 80%
Air pressure	0,55 Mpa = 80 psi
Machine noise level	78 dB
Machine head	510 mm (height) x 420 mm (width) x 620 mm (depth)
Machine head weight	40 kg
Machine weight	156 kg
Base of machine dimension	Adjustable 800 - 1050 mm (height) x 850 mm (width) x 850 mm (depth)
Eletrical requirements	230V/TN-S 1F+N+PE - 50/60Hz
Line circuit breaker	Min. 10A Charakteristic (EN60947-2)

6. COLOURED MARKING

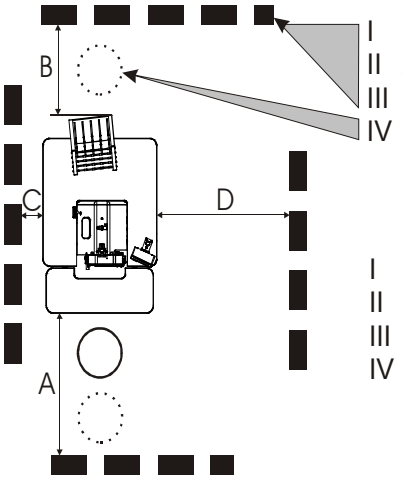
Screw - top links: ***Yellow marks*** — 1. Loosing and following disassembly of this link causes distinctive intervention to the mechanism adjustment, was done when assembled and sewed off at the that factory.

2. After such an intervention to the mechanism, new adjustment of set mechanism needs to be done and complete check of whole machine adjustment as well.

Blue marks — Screws and nuts secured against loosing with glue „LOCTITE“.

Lubrication locations: ***Red marks*** — ***CAUTION:*** *Lubrication regime adherance is necessary for protection of the reliable long-term machine operation.*

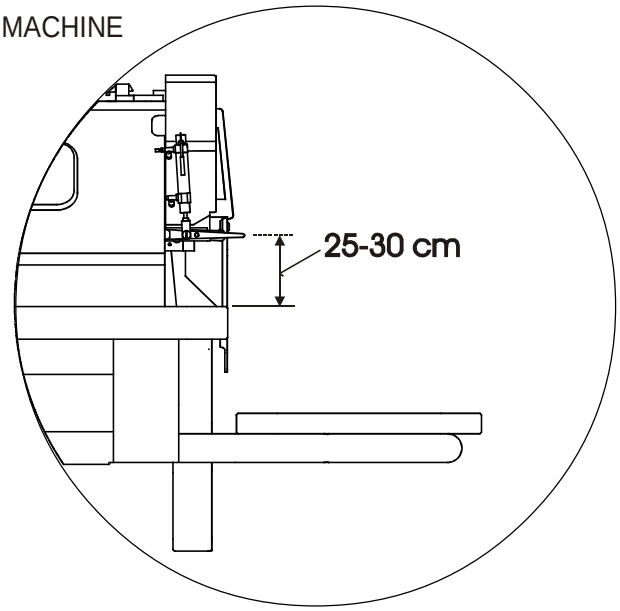
7. SAFETY INSTRUCTIONS FOR OPERATORS AND SERVECEMEN



I WALL, MACHINE
II ASIDE TABLE
III CONVEYER
IV SECOND OPERATOR OF A MACHINE

	Ⓐ	Ⓑ	Ⓒ	Ⓓ
I	0,9	0,6	0,1	0,6
II	0,9	0,6	0,1	0,1
III	1,4	0,2	0	0
IV	1,5	0,9	-	-

m



When installing the machine the manufacturer recomends the minimum clearance mentioned above the machine. Read all of the instructions that follow. DO NOT PUT MACHINE INTO OPERATION UNTIL YOU ARE COMPLETELY FAMILIAR WITH ALL INSTALLATION AND OPERATING INSTRUCTIONS.

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A - INTRODUCTION

DANGER!
- Before connecting the machine with the power, make sure all covers are mantled onto the machine.
- If any of the safety covers needs to be dismantled, turn the main switch off, and possibly unplug the power from the socket.
- Do not connect the machine with the power if any of the covers is dismantled.
- Once the machine is connected with the power, check the rotation of the pulley.

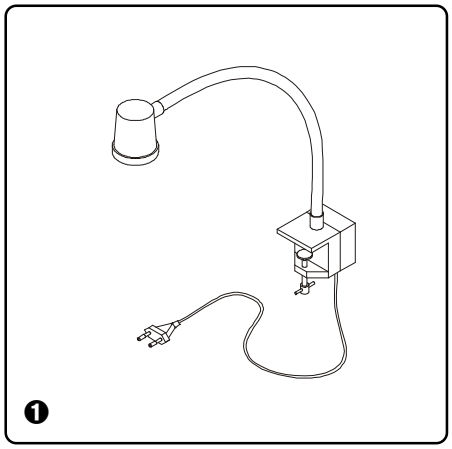
CAUTION!
- Remember the position of the switch so that you can use it from any position.
- Make sure that the power, its dimension and circuit breaker provides constant power supply to ensure reliable performance of the machine.
- Check that none of the cables is damaged in order to prevent accident injury from happening by touching them.
- Damaged covers must be immediately repaired or replaced with new ones.
- Never touch rotating parts.
- Never put fingers into the sewing area.
- Turn the main switch off before you change a needle.
- Unplug the power cord from the socket before you clean or maintain the machine.
- If you do not work on the machine, disconnect the power with the main switch.
- Do not make any modifications in the machine that would endanger its safety.
- Be aware that every machine part can become dangerous if they are not handled or serviced the right way. It is important that everybody working with the machine – operate it or do the maintenance on it – gets acquainted with information in this instruction book and in the spare parts manual.

WARNING!
- Keep maintaining the machine regularly as described in the manual.
- If the power is cut off, turn the main switch off.
- Do not paint, do not damage, do not remove or change the safety labels. Keep them clean. If they are not legible or you loose them, order new ones at our company and place it onto their original location.
- Bind your long hair – it can be caught and winded by the driving mechanism.
- Buttons (hooks) on your sleeves must be buttoned up so that loose parts of your outfit are not winded into the driving mechanism.
- Do not work onto the machine impaired or intoxicated.
- If you are unsure of the operation process, call up a serviceman.
- The machine user must provide for illuminating the working area – minimum 750 Lux.

8. SPECIAL EQUIPMENT

8.1. Work light ❶

- standard light can be ordered separately, order number 12.0008.4.875



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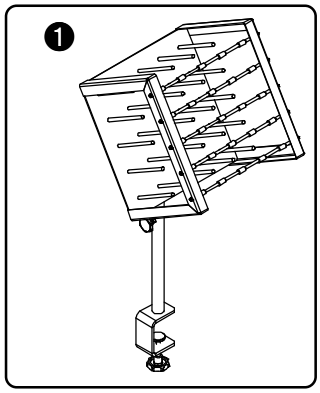
B - MACHINE INSTALLATION

1. PACKAGE CONTENT



1.1. The package includes the following, if not stated other way in the order:
- the composite machine on a base with electric installation
- a carboard with accessories
  (specified in the part about spare parts)
- a thread stand ❶
- operating instructions with a spare parts catalogue

1.2. Follow the labels on the packaging when unpacking the machine.

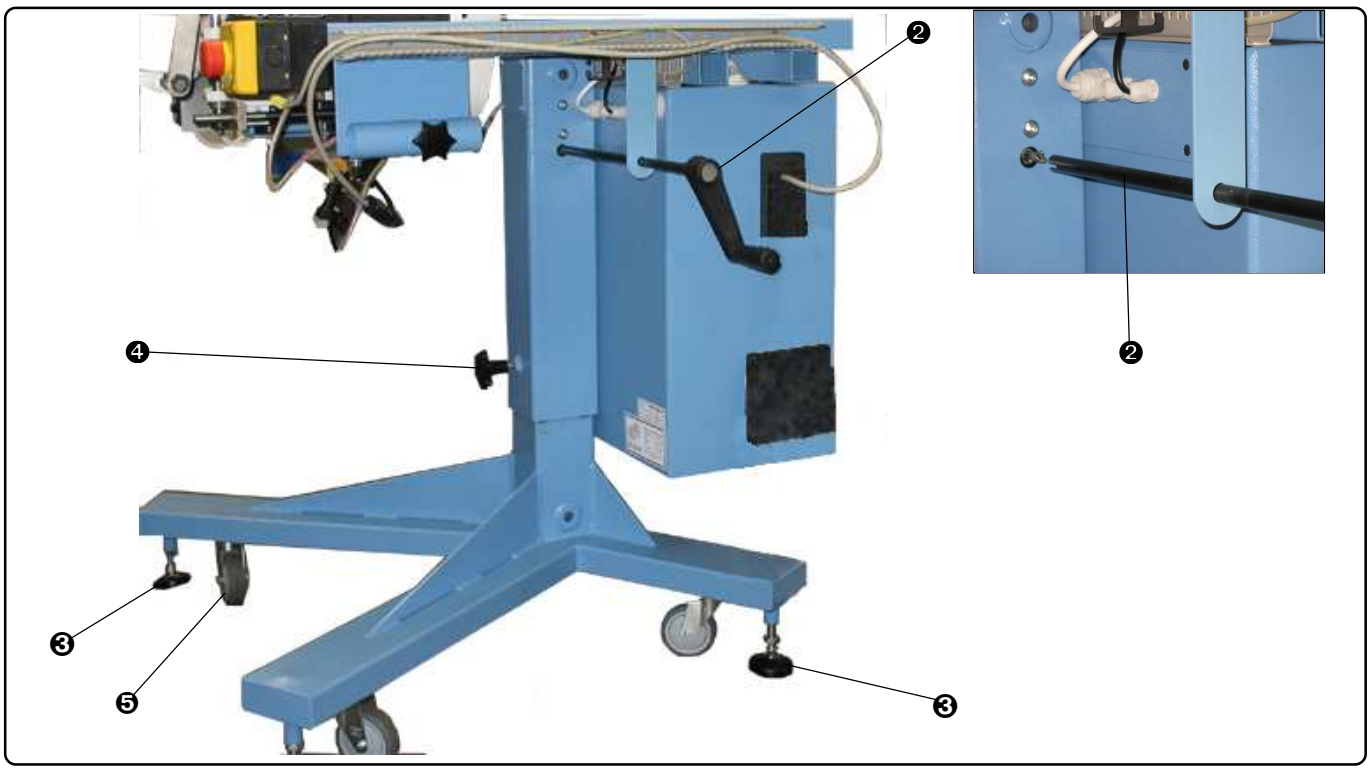
WARNING: The visible damages of the package must be immediately reported to the carrier. Check the content of the package with the order and immediately report the possible defects to the manufactuter - later complaints will not be responded!

2. ADJUSTING THE MACHINE

2.1. After unpacking the machine, install it into the designated place. The machine is delivered with a base for works in a sitting position. The recommended height of the lower-level desk from the floor is 870 mm. If you need to change the height loosen the screw ❹ by turning the hand crank ❷ from the accessories. If you need to raise the desk, turn it anticlockwise. Tighten the manual screw ❹ an the support ❸.

2.2. The supports ❸ are used to ensure the stability, by loosening their nuts. Check the level of the adjusted upper table and tighten the nut ❹.

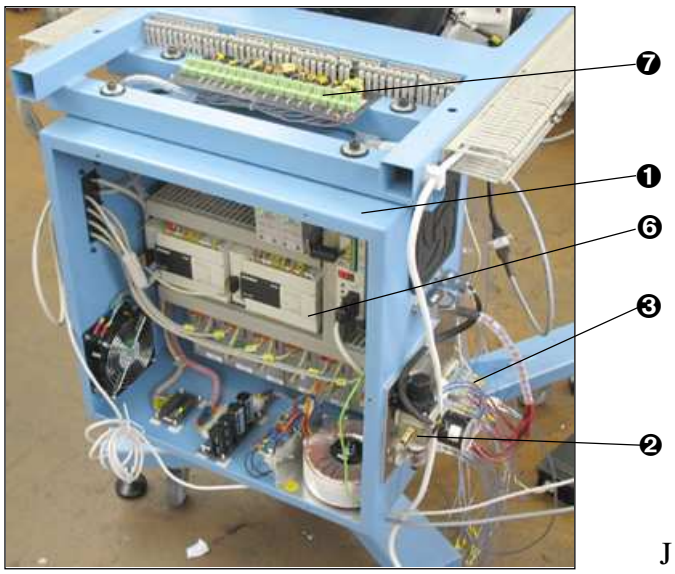
2.3. After placing the machine into another place screw the supports ❸ after you have loosened their nuts so as the stand leans against the movable wheels ❺ and the supports do not hamper in movements.

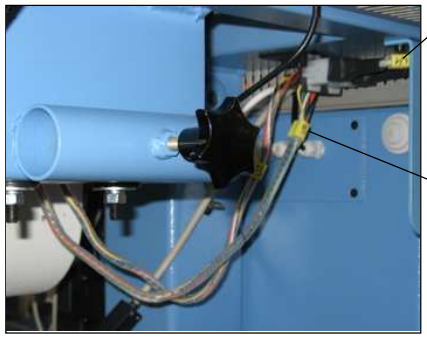


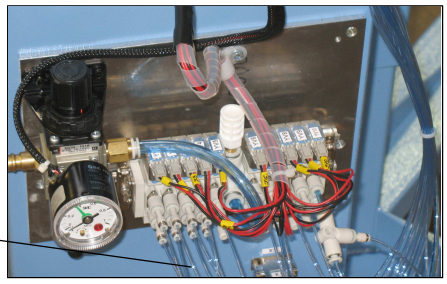
B - MACHINE INSTALLATION

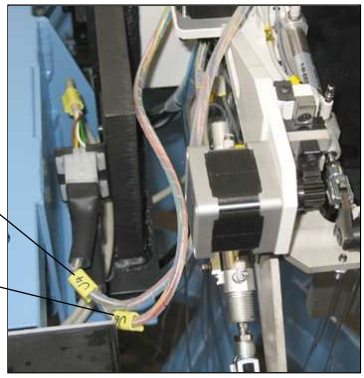
3. CONNECTING THE MACHINE HEAD WITH THE CONTROL CABINET

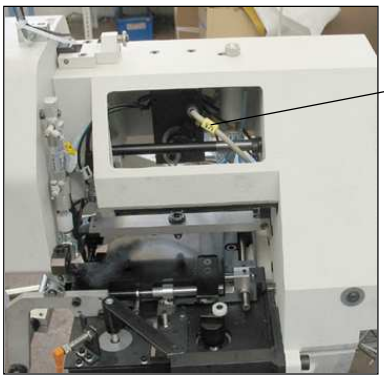
The machine is delivered from the manufacturer as completely engaged. The control cabinet ❶ of the base includes the electronics necessary for controlling the machine ❻ by an attached unit for the modification of compressed air ❷ and the vents ❸ used to control the pneumatic cylinders of particular mechanism.

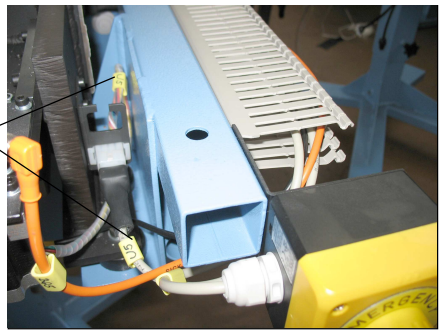












In case of possible demounting, the following should be joined:

3.1. - blue pneumatic hoses **J1A/B — J10A/B** with electromagnetic vents of the same designation - hoses **A** do the upper screws, **B** into the lower screws

3.2. - two cables for the servomotor - command/excentr

3.3. - the cable harnesses of stepping motors **U1, U6** with cables of the same designation from the cabinet in corresponding supports

3.4. - connecting the LED deadlight + the marking light at the transformers on the cabinet

3.5. - the sensor cables **BQ 1**...**BQ 12** connected to the terminal under the stand table.

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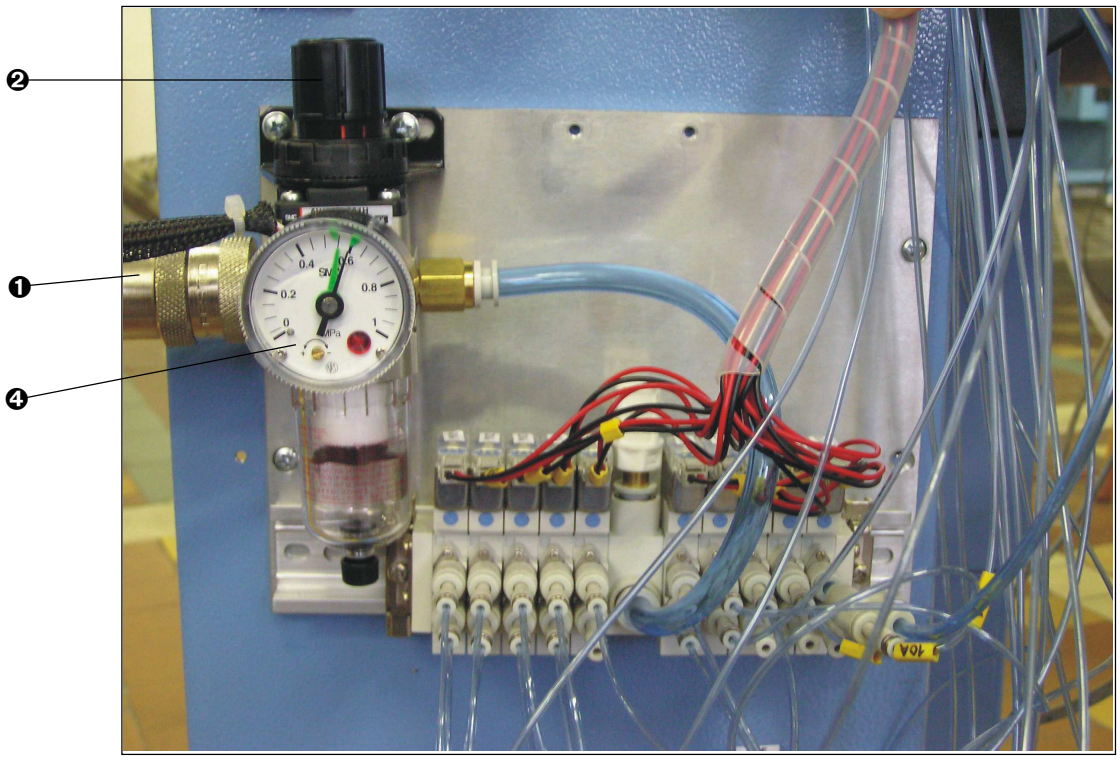
B - MACHINE INSTALLATION

4. CONNECTING THE MACHINE TO THE DISTRIBUTION OF ELECTRICITY AND AIR

4.1. The socket of the safety coupler ensures the easy connection of the unit used for the modification of air. On a regular basis we recommend to use the socket 25 KE AK 13. (order no. FESTO 151 776 designation KD -1/4, order no. RECTUS 38044). The unit has a matching input ❶. The input pressure must be higher by at least 1 bar (0,1Mpa) than the output pressure adjusted on the controller ❹. Alternatively it is possible to use a different connection of air inlet. In this case the manufacturer rocommends to complement the manual closure in the connection so as is possible to stop the air supply.

4.2. After connecting the air check the set pressure on the controller dial ❹. It must be min. 0,55 MPa. The correction can be carried out by pushing out the closure ❷. Increase the set pressure by turning clockwise, decrease it by turning anticlockwise. Push into the closure ❷ again.

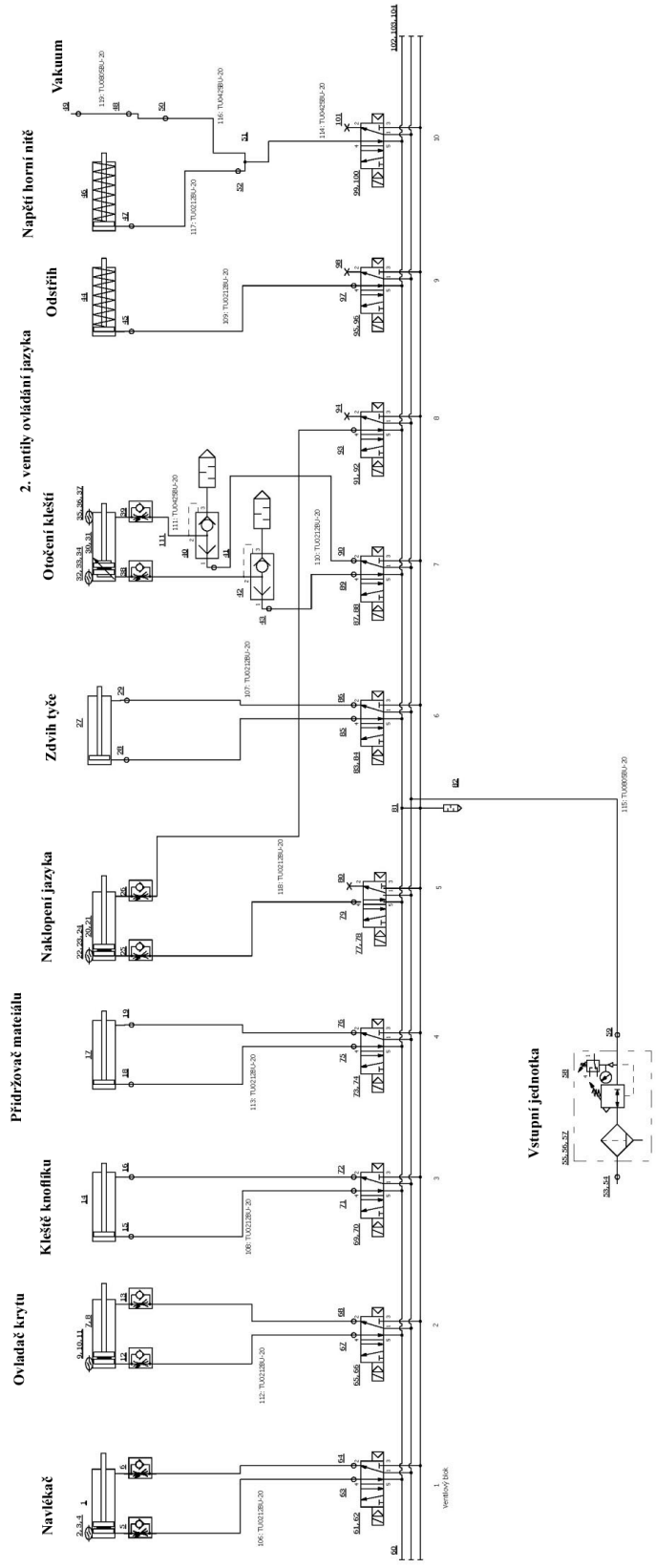


4.3. The electric power supply needs to be of 230V. The elctricity distribution socket for the supply fork must meet the requirements of the norm IEC 364-4-41, it must have a 10A „C“ fuse according to EN 60947-2 (event. 16A „B“ fuse). Other appliances cannot be connected to the circuit of the fused socket. The handwheel ❽ can be turned clockwise.

Note: *The machine is fitted with a filter by reason of interference elimination according to EMC - ČSN EN 50081-1 and 50081-2. In case there is a current a protector connected to the supply network you must use the type designed for devices with stray current and with high resistance to surge current in the operating wire (e.g. type „S“).*

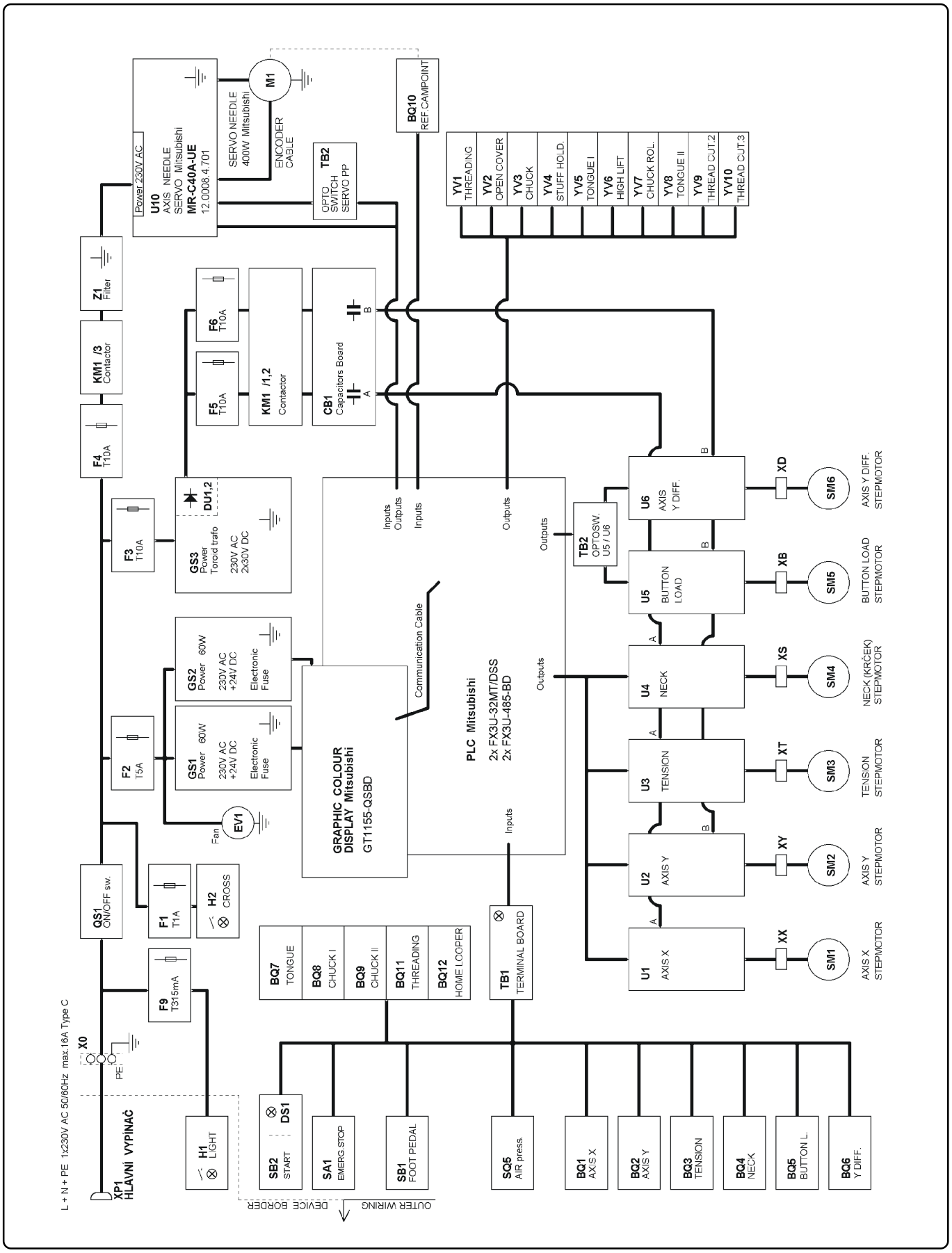
4.4. The provided warranty does not cover the LED diodes of sewer machine´ s lightning.

5. AIR DISTRIBUTION - PNEUMATIC SCHEMES



B - MACHINE INSTALLATION

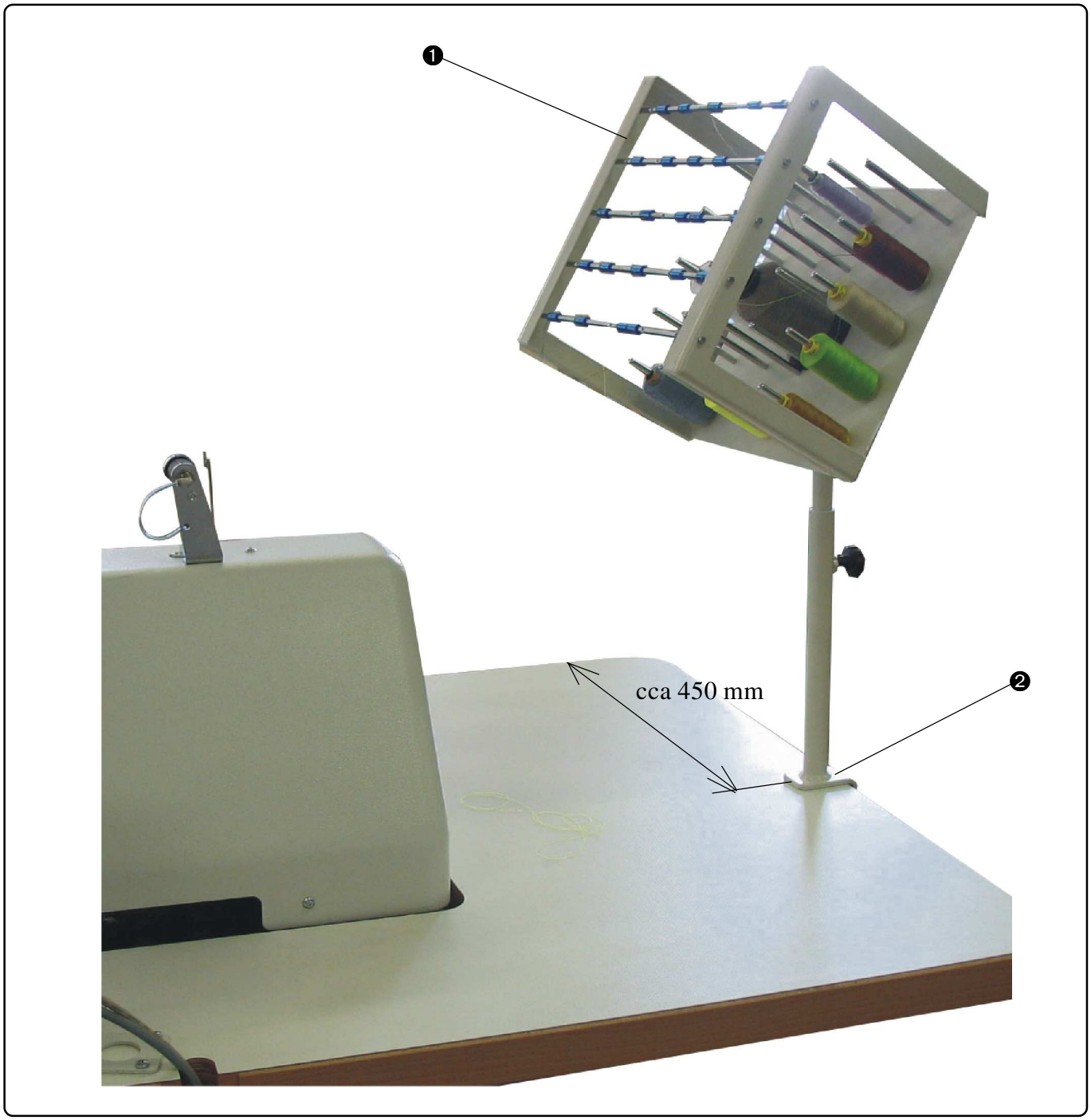
6. ELECTRICAL CIRCUIT SCHEMES



7. THREAD STAND INSTALLATION

7.1 Attach the thread stand ❶ with its accessories according to the figure.

7.2 The appropriate position when tightening its clamps ❷ is on the back side of the stand app. ... 450 mm from left.



C -CORRECT USAGE

1. INSTALLATION OF THE MACHINE INTO THE BASIC POSITION FOR SEWING

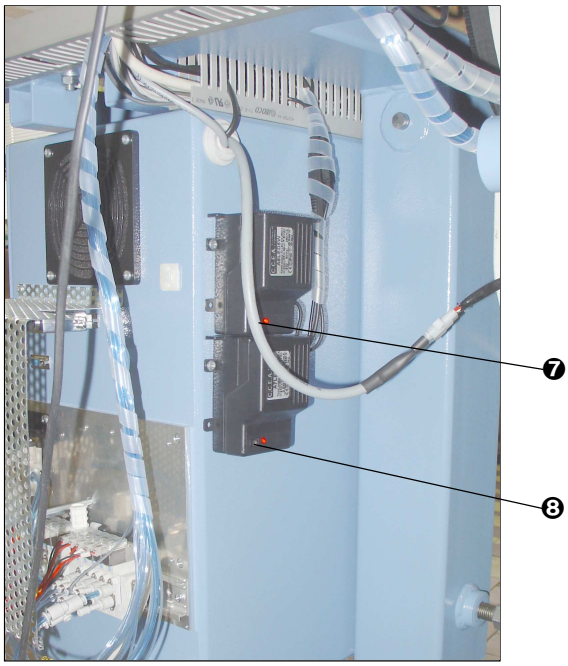
After connecting the machine with the fork on it is possible to light the sewing space by LED diodes, use the switch ❼ of the upper transformer on the electric cabinet. The switch ❽ of the lower transformer is used to light the adjusting.

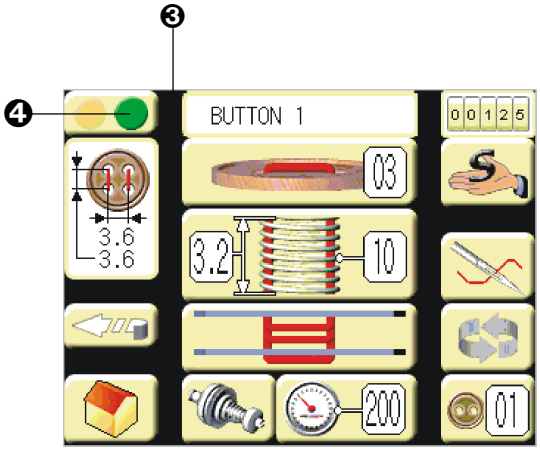
1.1. Turn on the main switch ❶ by turning it clockwise in to the position **I ON**.

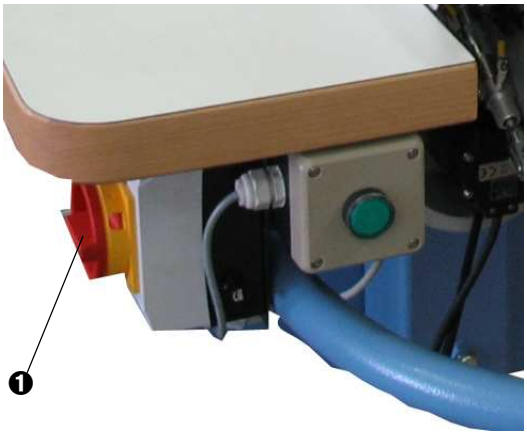
1.2. The display is activated and lit. The screen with the note GOT 1000 appears. Wait until the main screen ❸ appears on the display.

1.3. If the error message **E02** in the field ❹ is displayed on the screen (the machine is not in its basic position), turn the handwheel ❷ until **E01** appears. Then press the button . If no error messages are displayed see truobleshooting.

1.4. The machine is ready for operation when a green notice is displayed in the field ❹
*(See the display description in **D1**).*







C - CORRECT USAGE

2. NEEDLE REPLACEMENT

Note: Use only Reece 00200038….needles (for 30...70 thick threads). The load needles in the needle bar D =2 mm. Turn off the electric power supply before every handling by using the stop button.The error message **E 99** appears on the display.

2.1. Check if the upper looper ❶ is not in the area of the upper cover the needle bar ❷ , then release the cover through the hole in the cover ❻, use a stick (screwdriver), the button is to the left of the passing wires and the hose of the pneumatic cylinder ❼ . Lift up the cover ❷ to the position when the latch fixes it.

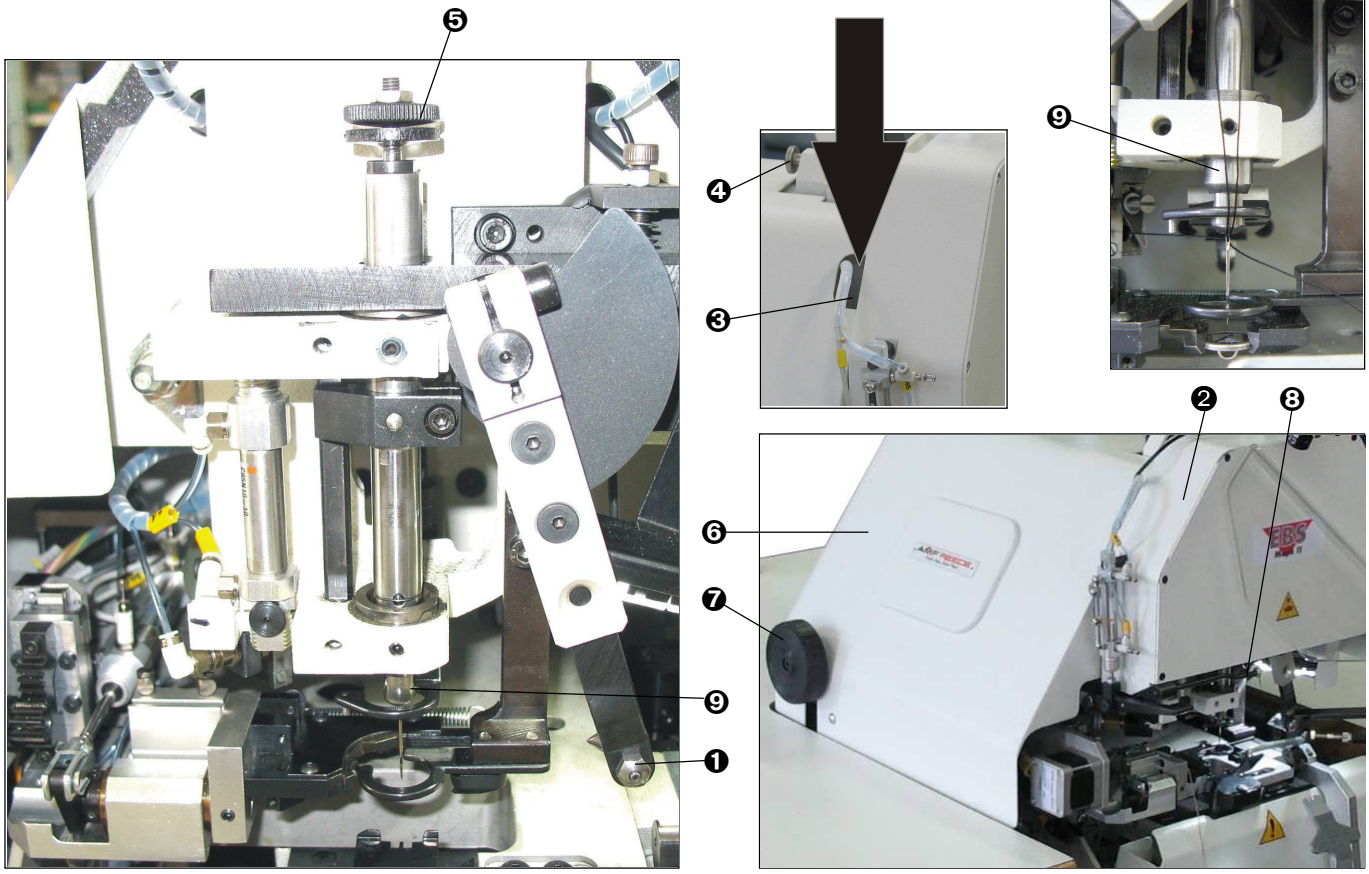
Warning: When the cover is open there is risk o injury caused by the threading hook ❽ which is located in the area of the lifted cover.

2.2. Press the insert of the needle bar by pulling the nut ❺ of the needle bar ❾ . Put the needle into the needle hole, with the facing eye facing the operator.

2.3 The case of the needle bar presses the needle after you loose the nut ❺ .Check the pressing of the needle by pulling it.

2.4 By turning the handwheel carry out two handovers of the needle between the upper and the lower needle bar and stop in approximately in the middle position when upper looper is to the right of the needle bar .

2.5. Close the needle bar cover ❷ pulling the hand nut that is placed above behind the cover suspender and press it in the lower position so as it is fixed by the button fuse ❿.



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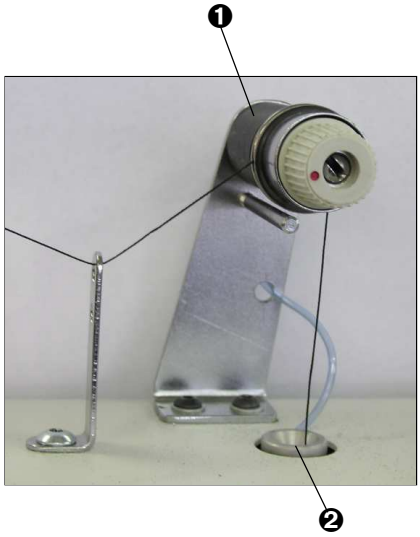
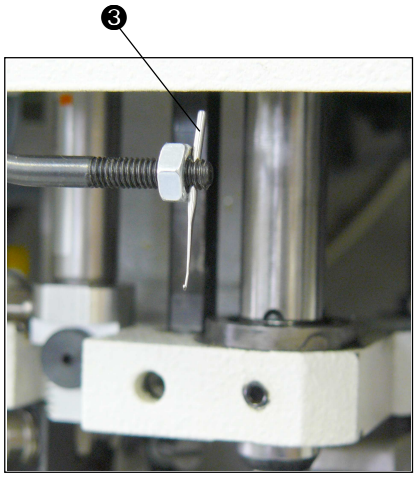
E-mail: service@amfreece.cz; parts@amfreece.cz; website: www.amfreece.com
Phones: +420 582 309 146 (Service), +420 582 309 286 (Spare Parts); Fax: +420 582 360 606

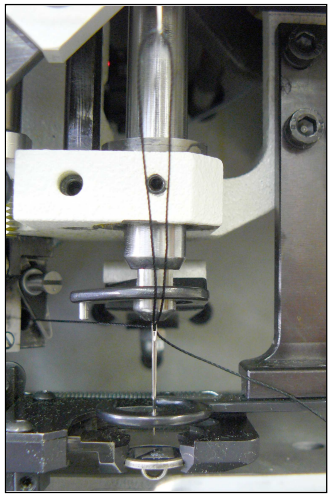
C - CORRECT USAGE

3. THREADING

3.1 Lead the thread from the stand through the tightener ❶ app. 50 mm into the leading hole ❷ of the mechanism for pneumatic threading.







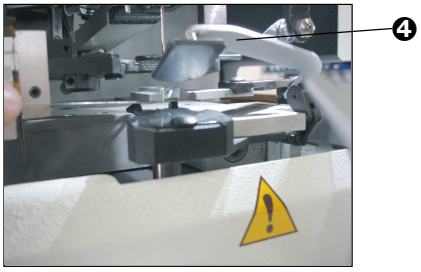
3.2 Activate the symbol of threading on the main screen. The thread gets in the area of the needle when the threading hook ❸ is at the needle. The operator leads the thread onto the threading hook ❸.

3.3 The threading into the needle is carried out automatically if you step on the stand pedal. The operator sets the thread reserve lenght of the thread necessary for one sewing cycle by pulling it.

Note: The thread reserve lenght is dependent on the chosen programme. The chosen type of buttons, the number of stitches, the neck height, the number of wrappings affect it.

C - CORRECT USAGE

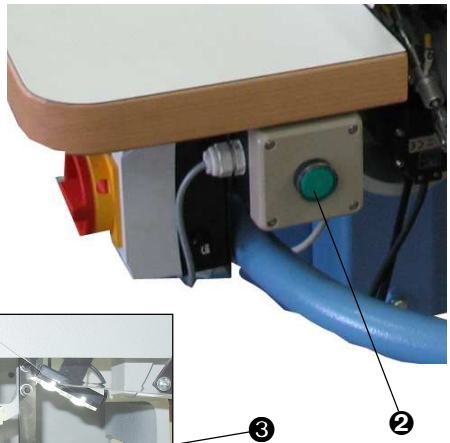
4. PROCEDURE AFTER SEWING THE BUTTON



4.1. Set the machine its basic position for sewing according to section **C1** of this part and check id the needle is in the upper needle bar.

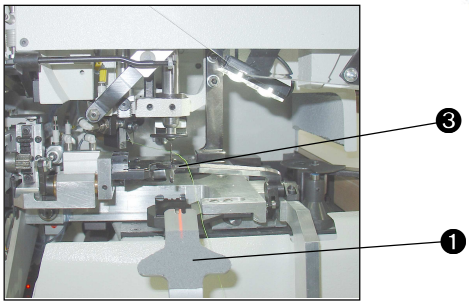
4.2. Thread according to section **C3**.

Warning: Check the display parameters in accordance with the chosen button.



4.3. Put the button on the appropriate holder ❸. Press the foot pedal so as the button is automatically placed into the chuck under the needle bar.

Note: We recommend using a gauge from the accessories instead of the button and programming no. 95. You should use simple Tesil fabric.



4.4. Place the sewed piece on the tongue ❶ . The cross of the marking light must overlap the sign used for placing the button on the sewed piece. The piece must be evenly alignet and must freely encircle the tongue.

4.5. Push/press the tongue into the machine up to the place where the machine fastens the piece. Carry out a repeated check of the piece surface evenness.

4.6. Press the foot pedal so as the machine puts the auxilary bottom end ❹ onto the tongue with the part for fixing the piece at the same time, it passes on the necessary for threading.

4.7. Lead the thread menually onto the threading hook in the upper direction. Press the foot pedal again. The threading hook leads the thread into the needle.

Note: If the hook damages the thread, it is necessary to cut off the damaget thread in the place where it was damaged.

4.8. Manually pull out thread and choose the necessary lenght of the thread for sewing one button. The lenght depends on the number of stitches, the wrapping, the bight and the number of button holes and the sewing type. The thread must lie freely on the sewed piece. When you use a sample gauge and programme 95 pull out an app. 350 long thread. Now it is possible to put the second button into the holder.

4.9. Press the button ❷ . Hold it for app. 0,5 sec. until the thread is loaded. The machine sews the button and cuts off the thread - the second button is put into the chuck.

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Phones: +420 582 309 146 (Service), +420 582 309 286 (Spare Parts); Fax: +420 582 360 606

D - MACHINE CONTROLS

1. MAIN MENU INTRODUCTION

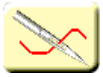
A colored touch screen display GOT 1000 is used to control individual machine functions. For easy use of the display and better orientation please read carefully the section D-Machine controls before programming the sewing parameters.

1.1 COMMONLY USED DISPLAY ICONS

- Machine status indicator / green is ON - machine is ready to sew, red is ON - machine is in operation

- Error message / press to enter error description screen

- Service mode / press to enter service menu operated only by service mechanic

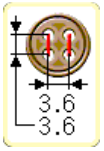
 - Threading / press to activate thread blowing system

- Cycle mode / press to enter cycle mode screen

- Step back / press to return to previous machine operation

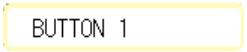
- Home position / press to set machine home position

- Program number indicator / press to enter numeric keyboard to select program number



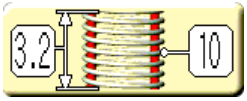
- Button parameters indicator / short cut to button parameters screen

- Daily counter / press to enter the counter screen



- Customized program name / press to enter alphabetic keyboard to set program name

- Stitch number indicator / press to enter button style screen



- Neck height and wrap indicator / press to enter button neck parameters screen

- Stitch style indicator / press to enter stitch style screen

- Locking stitch / press to enter locking stitch parameter screen

- Sewing speed indicator / press to enter sewing speed parameter screen

D - MACHINE CONTROLS

- Electronic thread tension / press to enter thread tension parameter screen

- Return / press to return to previous screen

- Cancel/ press to return to previous screen without changing the settings

- Delete/ press to delete all typed characters

- Delete/ press to delete last typed character

- Save/ press to save all settings and return to previous screen

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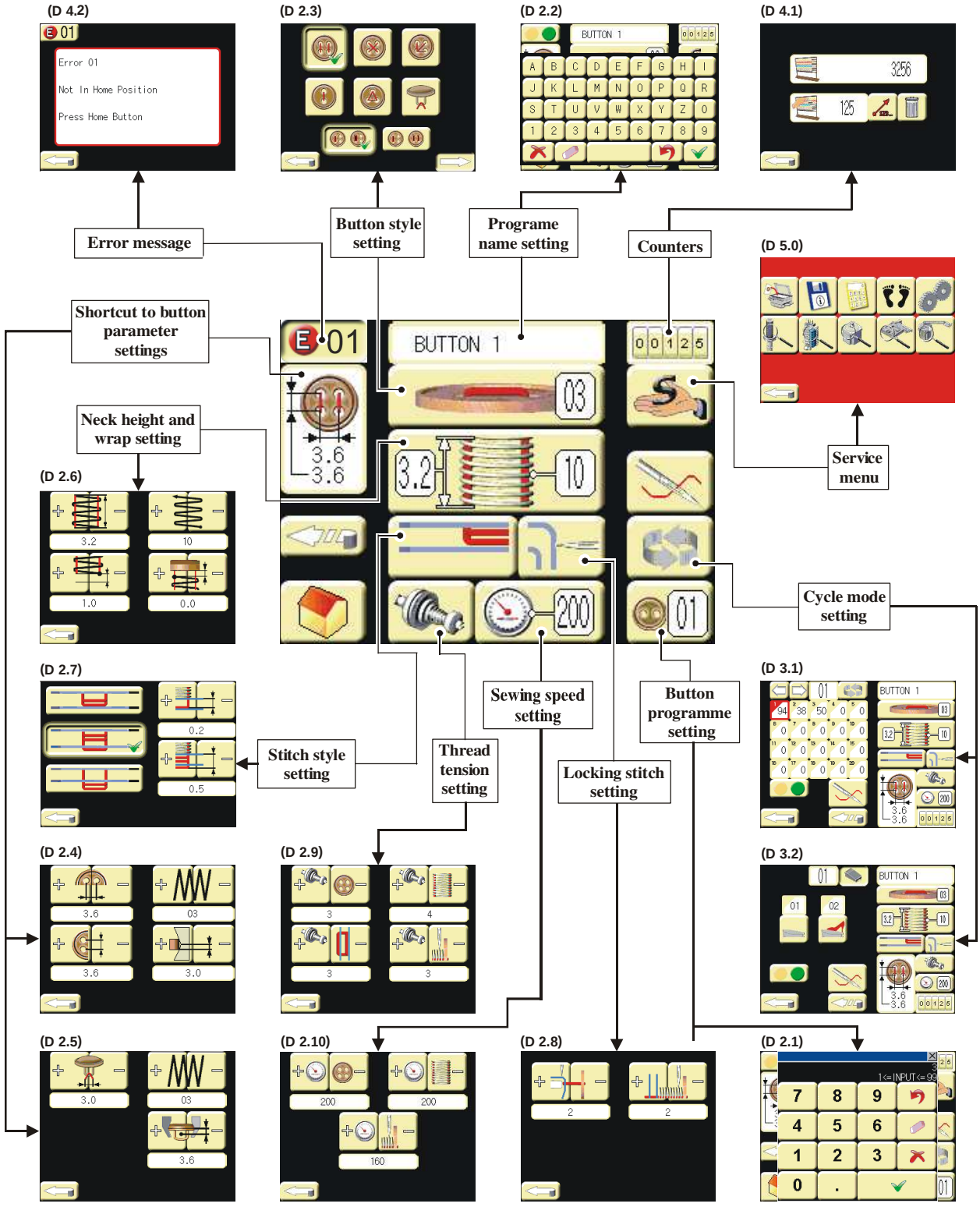
E-mail: service@amfreece.cz; parts@amfreece.cz; website: www.amfreece.com
Phones: +420 582 309 146 (Service), +420 582 309 286 (Spare Parts); Fax: +420 582 360 606

D - MACHINE CONTROLS

1.2 MAIN MENU DISPLAY OVERVIEW

Please see below brief overview of used displays for easy orientation and programming.



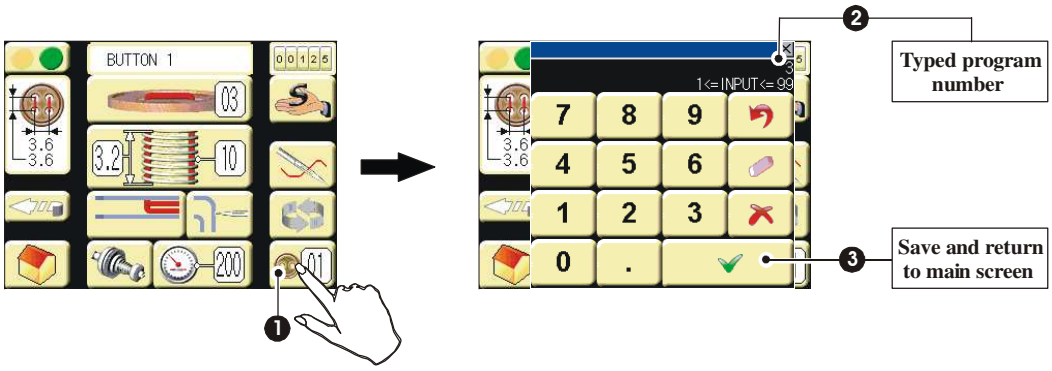
2. BUTTON PROGRAM SETTING

2.1 BUTTON PROGRAM

Before setting any button parameters described in sections D 2.2-2.10 a button program has to be selected.

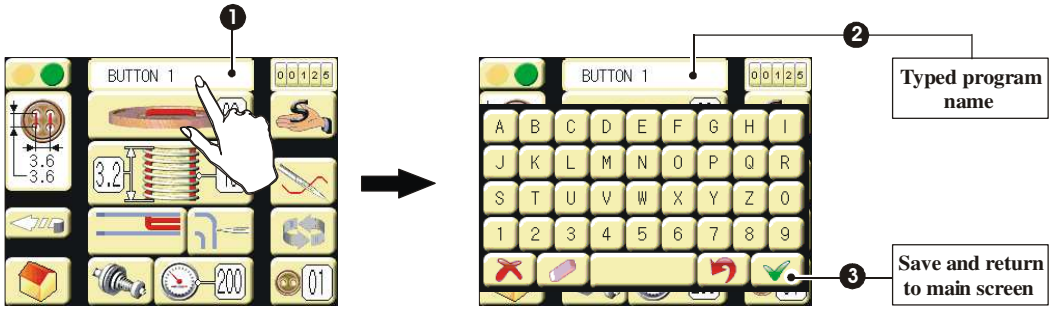
The machine has 99 different button programs. Programs 1 to 94 are available and can be programmed by operator. Programs 95 to 99 are default factory settings and can not be changed. Please refer to section E-1 of this manual for detailed description.

To set new button program, press, icon ❶ on the main screen to enter numerical keyboard. Type the required program number within range 1 to 94. The typed number appears on the top of the numerical keyboard screen, see point ❷. Save the setting and return to main screen by pressing icon ❸.
Once the button program is selected, start programming button parameters according to section D 2.3 -2.10. All set button parameters are automatically saved under selected button program.
In case you need to return to already programmed button program, follow the steps for setting new button program.



2.2 CUSTOMIZED PROGRAM NAME

To each button program can be assigned customized program name. This is used especially for better orientation within programs. The program name is combination of up to 15 alphabetic and numeric characters.
To set program name, press, icon ❶ on the main screen to enter numerical and alphabetic keyboard. Type the specific program name (max. combiation of 15 alphabetic and numeric characters). Typed characters appear on top of main screen, see point ❷. Save the setting and return to main screen by pressing icon ❸.



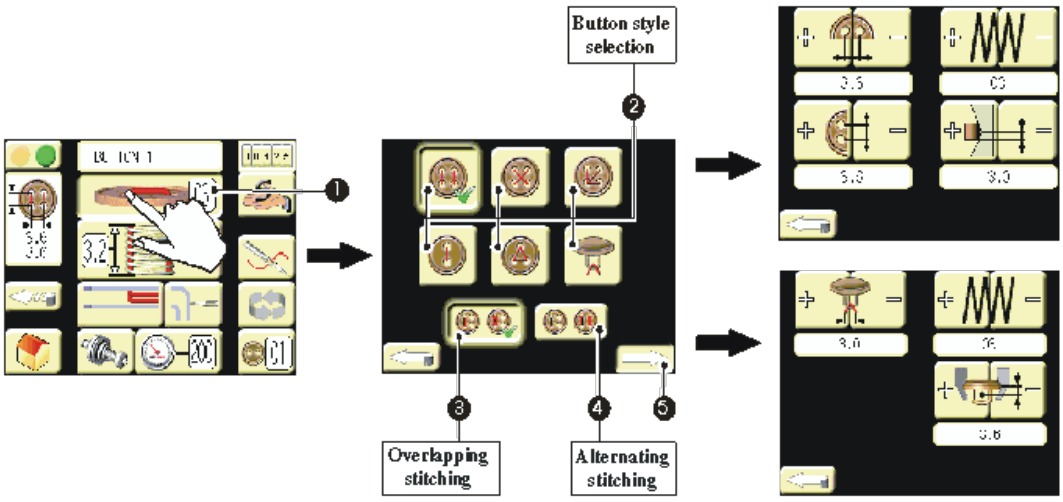
D - MACHINE CONTROLS

Follow the below steps in sections D 2.3 - D 2.10 **to set button style and further button parameters.**

Caution! **Please ensure that correct conversion kit (button holder, pucker pin, tongue) is installed according to the button style selected in the program. Please refer to parts section of this manuale page 3-46 of this manual for detailed description.**

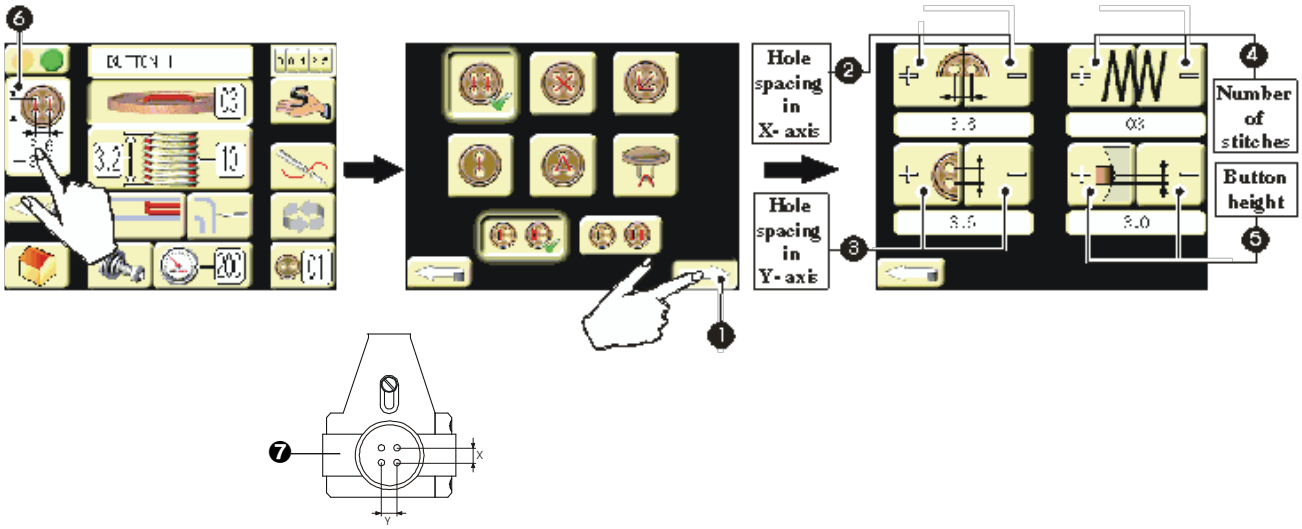
2.3 BUTTON STYLE

Press icon ❶ on the main screen to enter button style screen. Press one of the icons under point ❷ to select required button style. When sewing 3, 4-hole or shank button it is necessary to select the stitching method by icons ❸ or ❹. Press icon ❸ to select overlapping stitching method (machine sews first all stitches on the left pair of holes and then all stitches on the right pair of holes). Press icon❹ to select alternating stitching method (machine alternately sews right and left pair of holes). Press icon ❺ to enter button parameter screen to program additional parameters of selected button. For further explanation refer to section D 2.4 for 2, 3, 4 - hole button and D 2.5 for shank button.



2.4 2, 3, 4 - HOLE BUTTONS

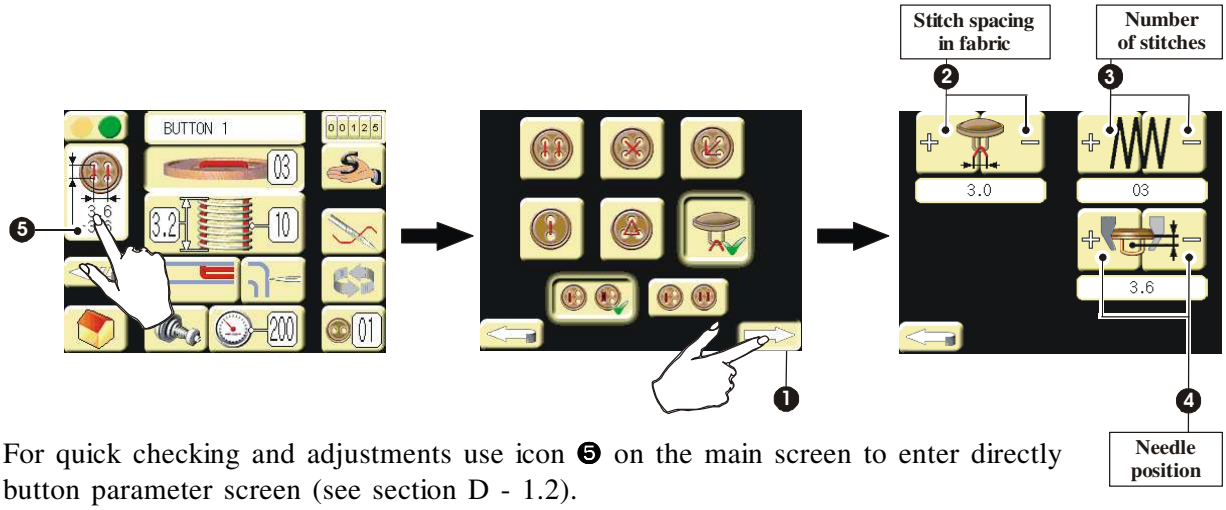
After selectinc reqeuired button style in see section D 2.3 continue with button parameter setings. Press icon ❶ on the button style screen to enter button parameter screen for buttons with hole. Press icon ❷ to set hole spacing in X-axis and icon ❸ in Y-axis. Refer to picture ❼ for detailed explanation. The hole spacing range is 3-6 mm. Press icon ❹ to set number of stitches according to definition A 4 within range 1-14 stitches. Press iccon ❺ to set button height important for button feeding and neck wrapping. The button height range is 1,0-3,5 mm and is measured from chuck center to the bottom edge of button.



2.5 SHANK BUTTON

After selectinc reqeuired button style in see section D 2.3 continue with button parameter setings.

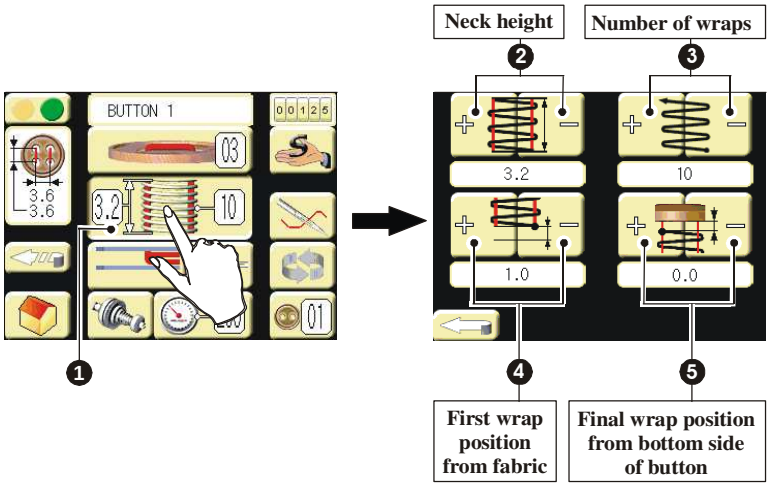
Press icon ❶ on the button style screen to the enter button parameter screen for shank button. Press icon ❷ to set stitch spacing in fabric within range 0-6 mm. When seting 0 mm spacing, stitches are sewn into one place. Press icon ❸ to set number of stitches according to definition section A 4 within range 1-14 stitches. Press icon ❹ to set needle position that is important for button feeding and button stitching. The needle position is the lowest point of the shank where the needle is passed through. This is measured from chuck center within range 2 to 5 mm.



For quick checking and adjustments use icon ❺ on the main screen to enter directly button parameter screen (see section D - 1.2).

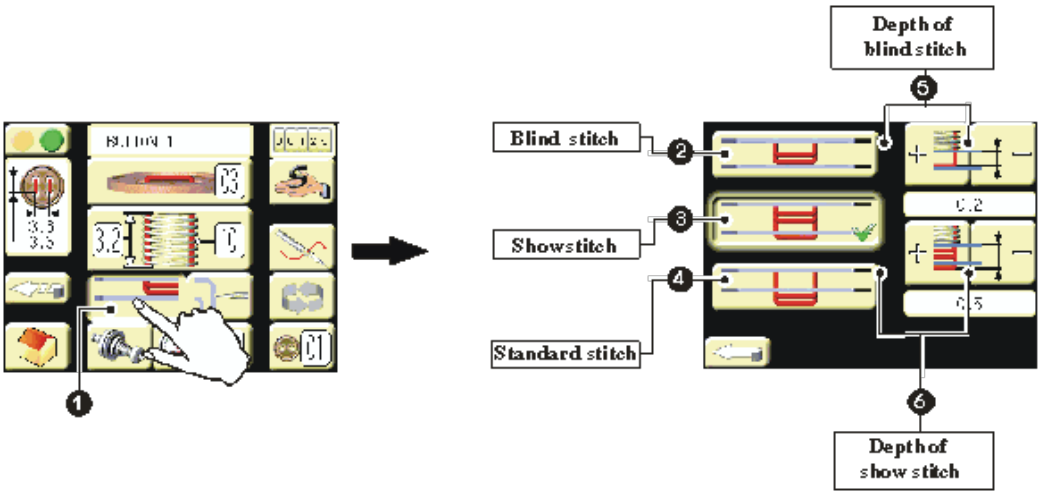
2.6 BUTTON NECK

Press icon ❶ on the main screen screen to enter neck parameter screen. Press icon ❷ to set neck height within range 0-8 mm. This range automatically lowers when the button height (see section D 2.4, point 5) is set more than 1,8 mm or the needle position (see section 2.5, point 4) is set more than 4 mm. Press icon ❸ to set number of wraps within range 0-30 wraps. When setting 0, the wrap in not performed. Press icon ❹ to set position of first wrap from fabric within range 0-3 mm. Press iccon ❺ to set position of final wrap closer to button within range 0-2 mm (recomended when sewing rounded or bevelled buttons). When extreme values are set as parameters ❷ , ❹ and ❺, the wrap can not be performed and the graphic wrap symbol on the main screen, shown as .



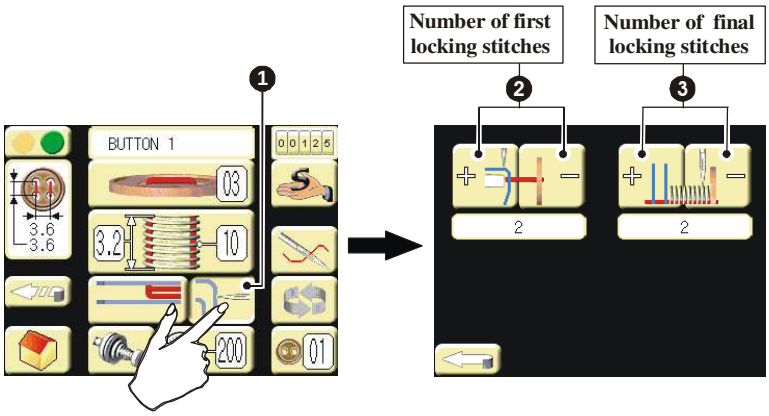
2.7 STITCH STYLE (SHOW, BLIND, STANDARD STITCH)

Press icon ❶ on the main screen to enter stitch style screen. Press icon ❷, ❸ or ❹ to select stitching style - blind (all stitches blind), show (one stitch shown, rest blind), standard stitch (all stitch visibility inside the garment). Depending on selection appropriate icons of stitch depth ❺, ❻ are highlighted. Press icon ❺ to set stitch dept for blind stitch within range 0-3 mm from garment facing. Press icon ❻ to set stitch dept for show stitch within range 0-3 mm from garment facing.



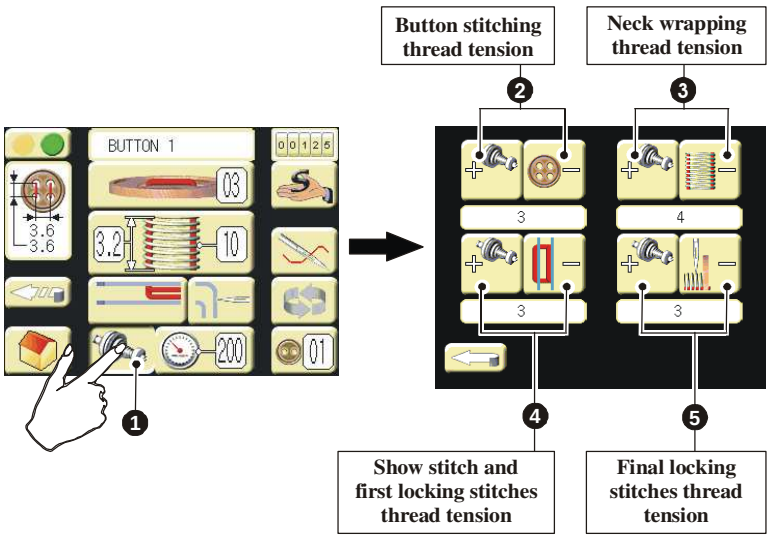
2.8 LOCKING STITCH

Press icon ❶ on the main screen to enter locking stitch parameter screen. Press icon ❷ to set number of locking stitches sewn to fabric before button attaching. The stitch range is 0-3 stitches. Press icon ❸ to set number of final locking stitches sewn trough wrapped button neck (needle is passed through the neck) in case of buttons with hole. In case of shank button the final locking stitches are sewn to fabric as the first locking stitches. The stitch range is 0-3 stitches.



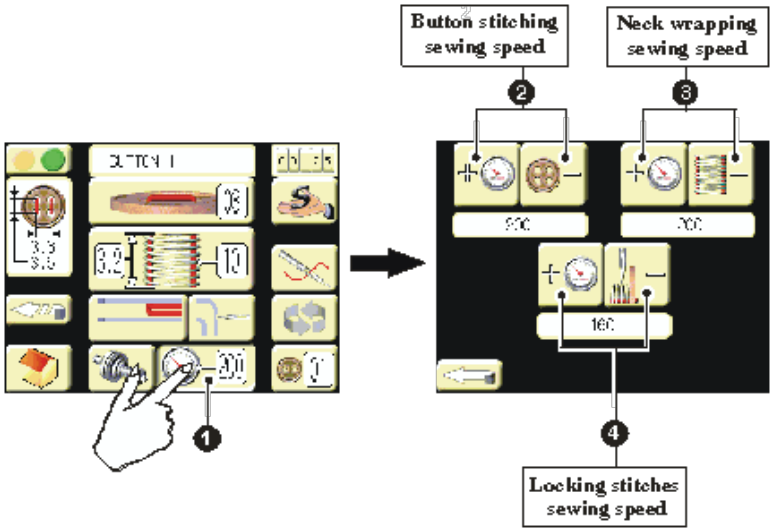
2.9 THREAD TENSION

The thread tension can be separately programmed for four different sewing phases-button stitching, neck wraping, show stitch, locking stitches.
Press icon ❶ on the main screen to enter thread tension parameter screen.Press icon ❷ to set thread tension for stitching the button within the range 1-20. Press icon ❸ to set therad tension for wrapping the button within the 1-20. Press icon ❹ to set thread tension of show stitch and first locking stitch within the range 1-20. Press icon ❺ to set thread tension for final locking stitches the range 1-20.


Button stitching thread tension
Neck wrapping thread tension
BUTTON 1
Show stitch and first locking stitches thread tension
Final locking stitches thread tension

2.10 SEWING SPEED

The sewing speed can be separately programmed for three different sewing phases-button stitching, neck wrapping and first and final locking stitches.
Press icon ❶ on the main screen to enter sewing speed parameter screen. Press icon ❷ to set sewing speed for stitching the button within the range 100-200 spm in the increments of 5 spm. Press icon ❸ to set sewing speed for wrapping the button within the range 100-200 spm in the increments of 5 spm. Press icon ❹ to set sewing speed *Of* first and final locking stitches within the rang 100-200 spm in the icrements of 5 spm.



3. CYCLE MODE DESCRIPTION

Cycle mode function enables sewing of different button programs with different settings in one repeating sewing cycle. Available are 2 different cycle modes – standard and prompt.

Please note that all setting are described starting from the main (standard) cycle mode screen. To enter the cycle mode screen see section D 1.2.

3.1 STANDARD CYCLE MODE

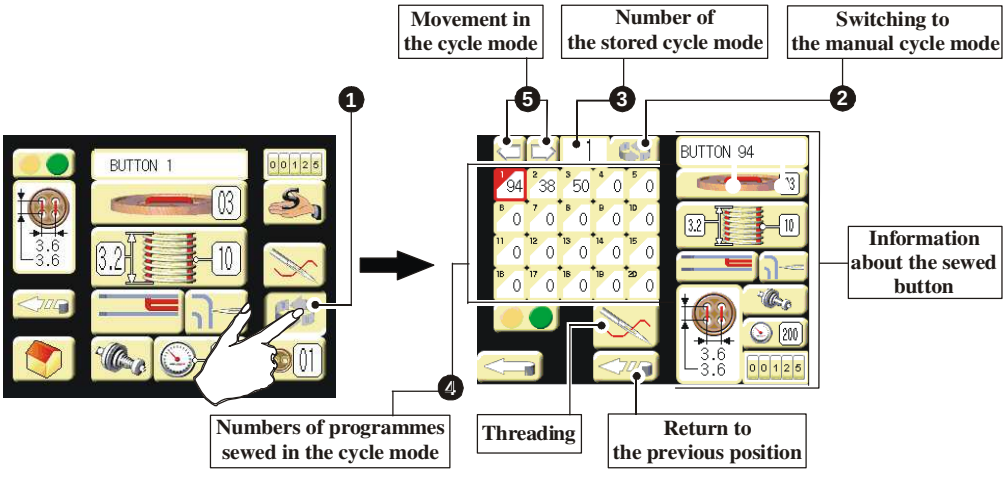
The standard cycle mode can accommodate up to 20 different button programs to be sewn in one cycle mode program. Machine has memory of 20 different standard cycle mode programs

3.1.1 PROGRAMMING THE STANDARD CYCLE MODE

In case the standard cycle mode screen is not available, the prompt cycle mode screen is on and it is necessary to press icon to switch the machine to the standard cycle mode program. Once the standard cycle mode screen comes up, start programming the cycle sewing.

Press icon ❶ on the standard cycle mode screen to enter numerical keyboard and select the cycle mode program number within the range 1 to 20.
Under the selected cycle mode program, enter required button programs for positions 1-20. Press required position (1-20), see point ❷, to enter numerical keyboard and type particular number of button program (1-94) that you have save in the machine memory before. See section xxx. Note that the cycle mode can work only with pre-programmed button programs.
The end of cycle program is define by entering number "0" in the position following upon the last entered button program, see point ❸. This means that the cycle mode is finished and the sewing starts from beginning.

Note:
The currently sewn button program/ position is highlighted in red.
Icons under point ❹ are used for quick setting and adjustment and have same functions as icons used on the main screen, see section D 1.2



3.2 PROMOD CYCLE MODE

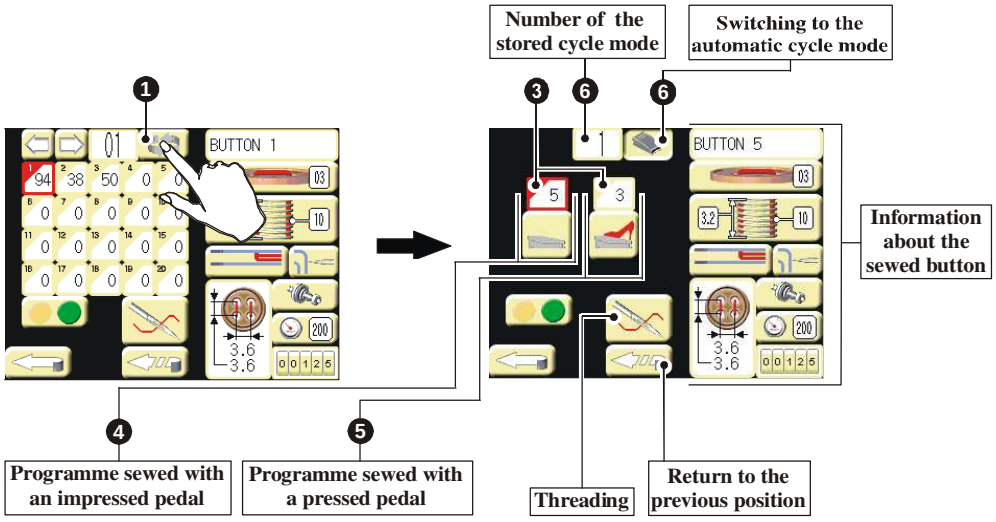
The prompt cycle mode is designed only for 2 different button programs to be sewn in one cycle mode program. Machine has memory of 20 different prompt cycle mode programs.

3.2.1 PROGRAMMING THE PROMT CYCLE MODE

To enter the prompt cycle mode screen press icon on the standard cycle mode screen.

Press icon ❶ on the prompt cycle mode screen to enter numerical keyboard and select the cycle mode program number within the range 1 to 20.
Under the selected cycle mode program, enter required button programs for position 1, see point ❷ and position 2, see point ❸. Press required position, to enter numerical keyboard and type particular number of button program (1-94), see section E 1. Note that the cycle mode can work only with pre-programmed button programs.
Bring machine to the position ready for sewing (green light is on), see section xxx.
Press start button to sew the button program saved in the position 1, see point ❷.
Press machine pedal to switch the machine to the button program saved under position 2, see point ❸.
To start sewing, press the start button.

Note:
The currently sewn button program/ position is highlighted in red.
Icons under point ❹ are used for quick setting and adjustment and have same functions as icons used on the main screen, see section D 1.2.
In case the machine is not in the position ready for sewing (green light is not on), the icons ❷ and ❸ can be also used for quick checking of adjusted parameter.



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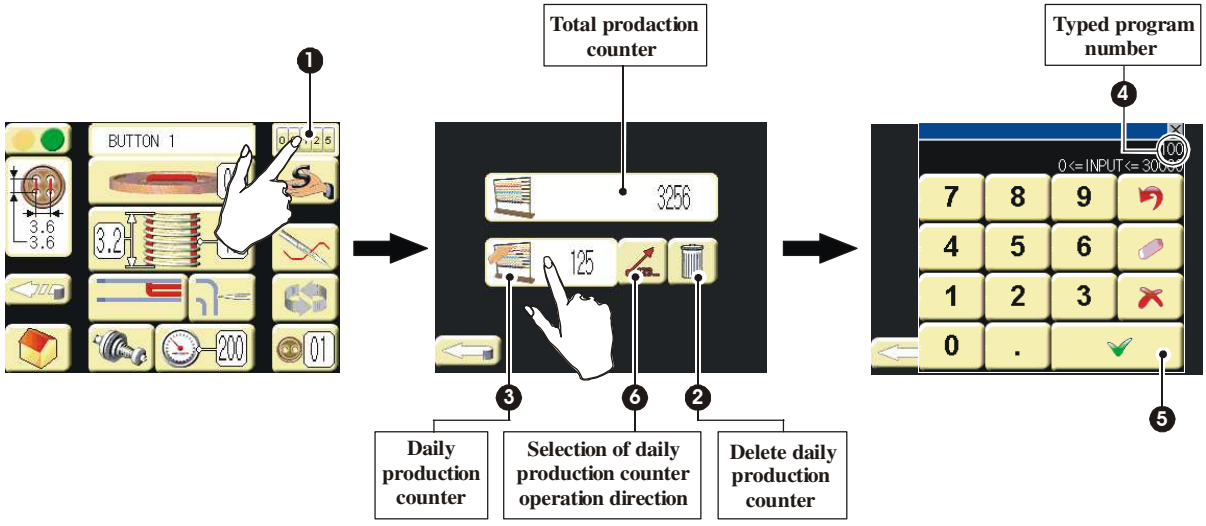
4. COMPLEMENTARY FUNCTIONS

4.1 BUTTON COUNTERS

Machine has two different counters - daily and total production counter. The daily counter can be used as shift, batch production counter etc. of sewn buttons and can be deleted when needed. The daily production counter can be set within the range 0-30 000. The total production counter counts overall button production and indicates the machines‘ wear out. This counter can not be deleted.

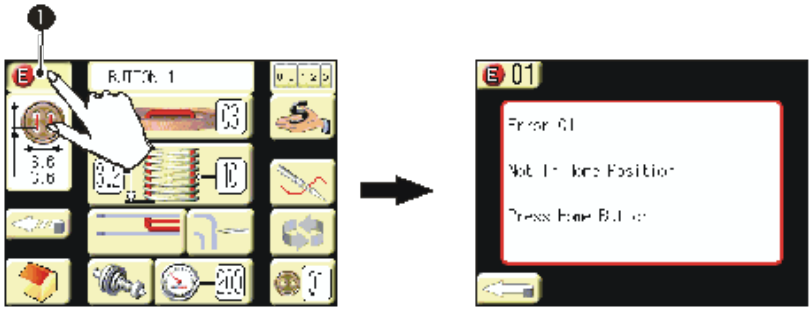
4.1.1 SETTING DAILY PRODUCTION COUNTER

Press icon ❶ on the main screen to enter counter screen. Press icon ❷ to delete daily production counter or icon ❸ to set daily production counter. In case icon ❸ is selected numerical keyboard appears on top of counter screen. Enter require number of sewn buttons within range 0-30 000. Typed number appears on the top of numerical keyboard screen, see point ❹. Press icon ❺ to save all settings and return to the counter screen. The production can be counted on ascending or descending form. Press icon ❻ to selected operation direction of daily production counter.



4.2 ERROR MESSAGES

In case fault occurs on the machine, error message appears on the main screen. Press icon ❶ on the main screen to enter error description screen. The error description screen indicates error number (first line), error description (second line) and probable solution of occurred fault (third line). Please refer to section **3 Trouble shootings** of this manual for detailed description ***Of*** error massages.

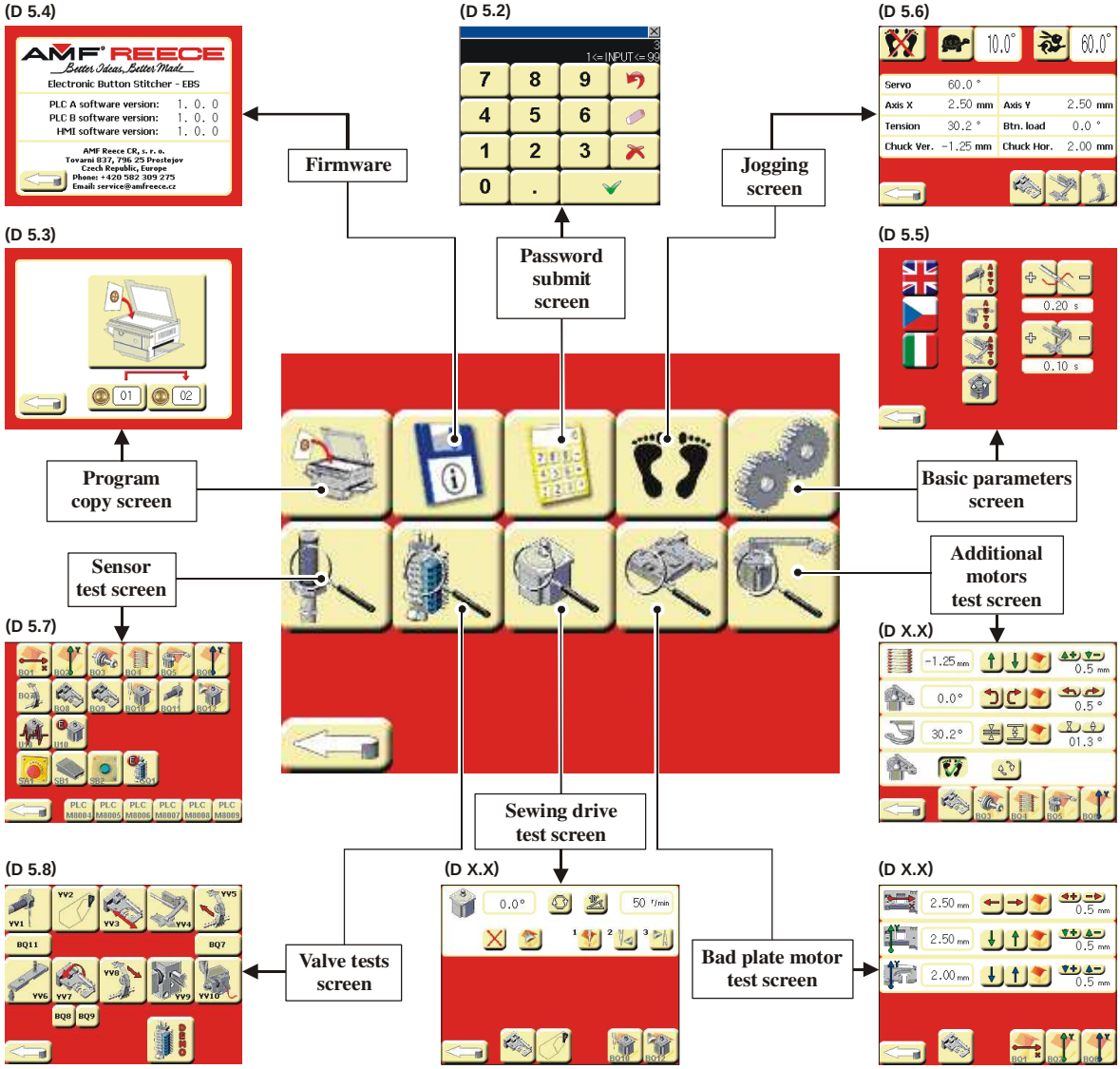


5. SERVICE MENU DESCRIPTION

5.1 SERVICE MENU DISPLAY OVERVIEW

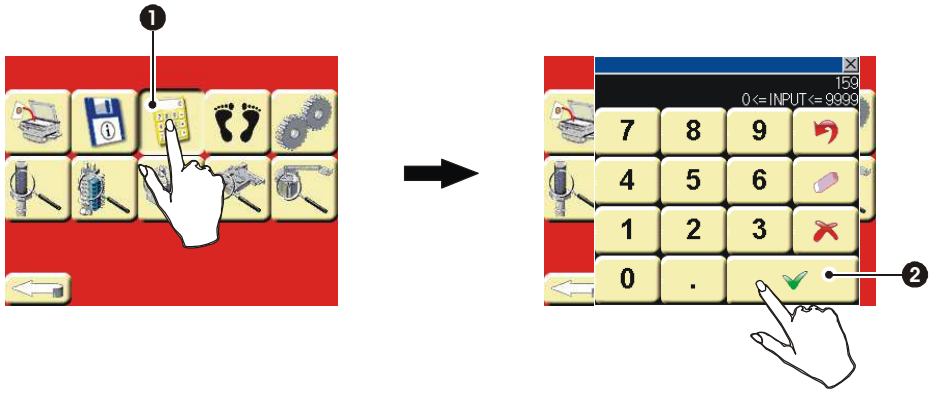
Please see below brief overview of used displays of service menu. The service menu can be operated by trained service mechanic only and is divided into several levels depending on required qualification and frequency of service settings. Each level is protected by specific password, please see section D-5.2 for details.

Please note that all settings are described step by step **starting from the service menu screen**. To enter the service menu screen see section D-1.2.



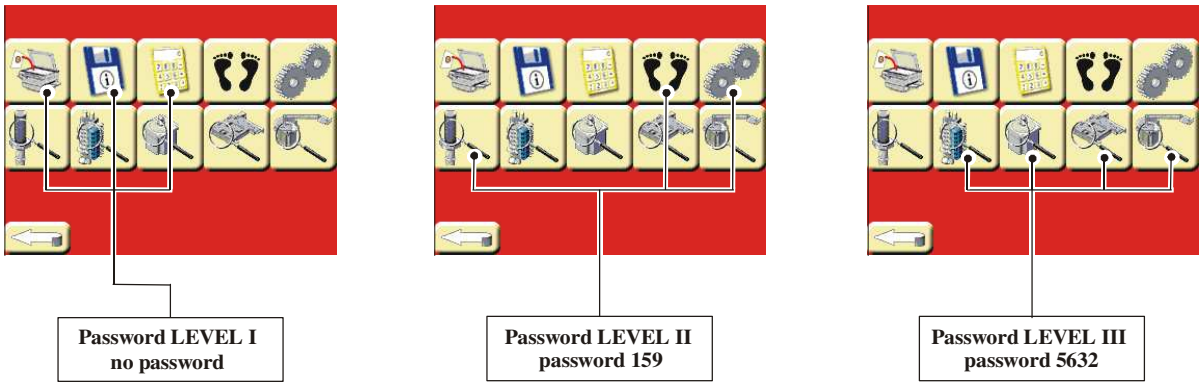
5.2 PASSWORD SUBMITTING

The service menu has 3 different setting levels. Level II and III are protected by passwords, see section D-5.2.1 To submit the password press icon ❶ on the service menu screen to enter numeric keyboard. Type the appropriate numeric code and press icon ❷ to save all settings.



5.2.1. PASSWORD LEVELS

Please see below brief overview of service menu setting levels including relevant passwords.



Also!

Once the password is submitted all service functions protected by this specific password are activated. This means, when is submitted for example password level II, all functions from level II, are available.

In case password level III is submitted, the service functions protected by password level II are available without submitting password level II.

5.3 PROGRAM COPY

Program copy screen enables easy and quick copying of selected button program under new required program number.

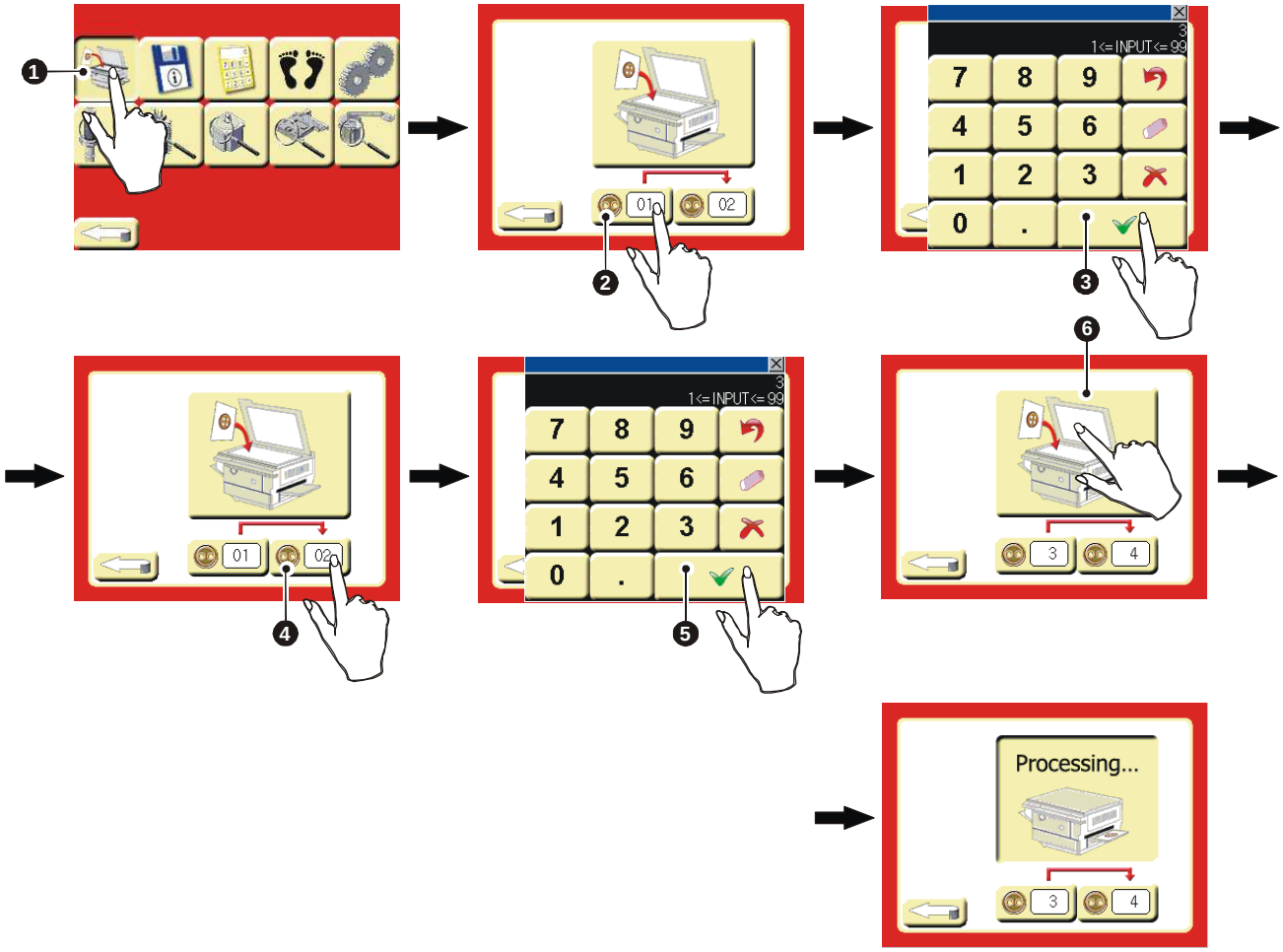
Press icon ❶ on the service menu screen to enter program copy screen.

Press icon ❷ to enter numerical keyboard. Select program number you want to copy.

Press icon ❸ to save the setting and return to program copy screen.

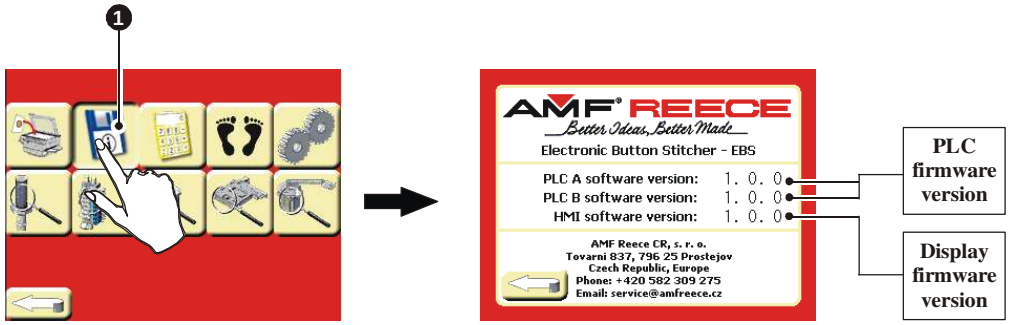
Press icon ❹ to enter numerical keyboard. Select program number under witch you want. Press icon ❺ save the setting and return to program copy screen.

Press icon ❻ to process the program copying, see point ❼.



5.4 FIRMWARE INFORMATION

Information screen provides the user with information such as display firmware version, PLC firmware version and manufacturer‘s contacts. To enter information screen, press icon ❶ on the service menu screen.


1
AMF REECE
Better Ideas, Better Made
Electronic Button Stitcher - EBS
PLC A software version: 1. 0. 0
PLC B software version: 1. 0. 0
HMI software version: 1. 0. 0
AMF Reece CR, s. r. o.
Tovarni 837, 796 25 Prostejov
Czech Republic, Europe
Phone: +420 582 309 275
Email: service@amfreece.cz
PLC firmware version
Display firmware version

5.5 BASIC PARAMETERS

The basic parameter screen enables selection of display language, activation of pneumatic threading, activation of automatic button feeding, activation of automatic fabric holder and automatic servo home positioning. To enter basic parameter screen, press icon ❶ on the service menu screen.

Icons in point ❷ are used to select required display language (English, Czech or Italian) especially used on error description screen.

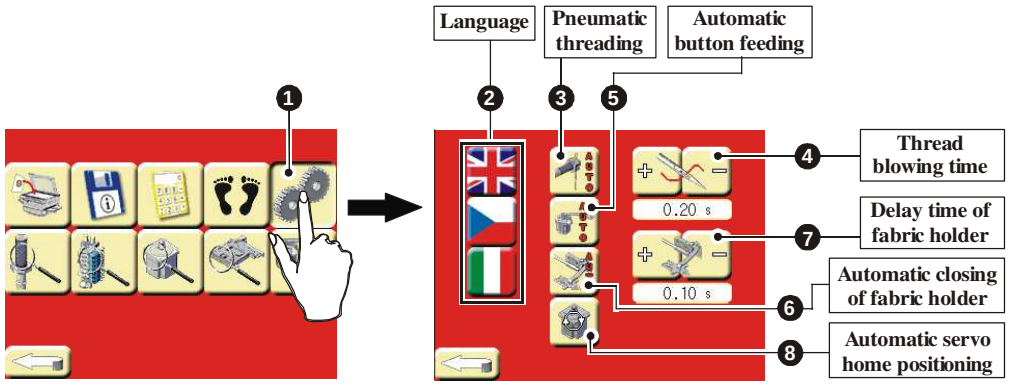
Icon ❸ is used to activate/deactivate pneumatic threading system. In case icon ❸ is activated threading device is controlled by pedal. In case icon ❸ is not activated threading device has to be controlled manually.

Icon ❹ is used to set thread blowing time of blowing system. Activation of the thread blowing system itself is done by pedal. To obtain requrired thread end increase or decrease the set time.

Icon ❺ is used to activate/deactivate automatic button feeding. In case icon ❺ is activated machine automatically loads another button every time sewing cycle is finished.

Icon ❻ is used to activate/deactivate automatic closing of fabric holder. In case icon ❻ is activated using fabric holder is closed automatically and it is necessary to set dealy time of fabric holder icon ❼. This delay time is a time from closing tongue till closing fabric holder. In case icon ❻ is not activated fabric holder is controlled by pedal.

Icon ❽ is used to activate/deactivate automatic servo home positioning. In case icon ❽ is activated the servo is brought to its home position every time home position icon on the main screen is pressed. In case icon ❽ is not activated servo has to be brought to its home position manually by using hand wheel on machine head.



5.6 JOGGING

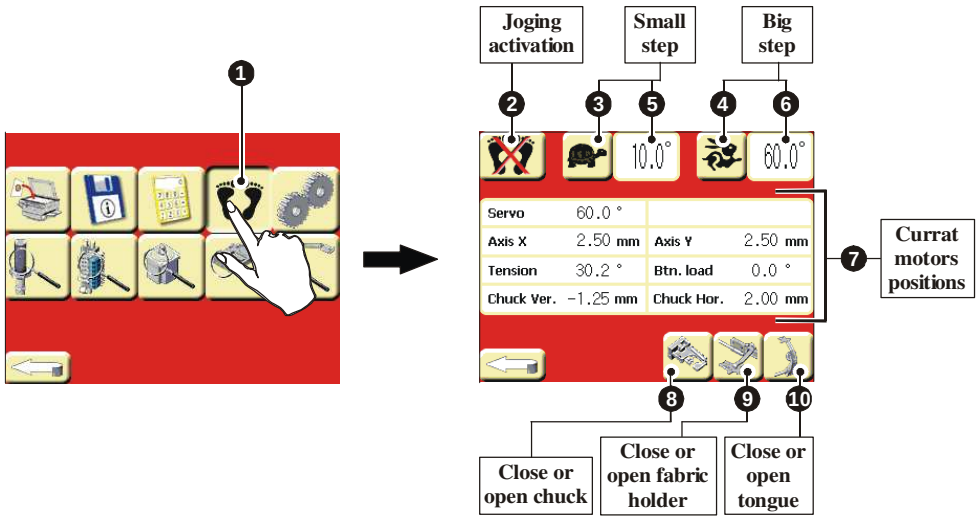
Jogging function enables the user to monitor button sewing process and check all set parameters. Jogging function is protected by password level II, see section D 5.2.

Caution:
Before using jogging function, please make sure, button is loaded to chuck and **machine is in position ready for sewing**. This means the green start button is on, see section C 1 for details.

5.6.1 JOGGING SCREEN DESCRIPTION

Press icon ❶ on the service menu screen to enter jogging screen. Press icon ❷ to activate/ deactivate jogging function. Jogging function is activated , jogging function is deactivated . In case jogging function is activated machine can perform jogging in small or big steps which are set in degrees by using icon ❺ (small step) or ❻ (big step).
To achive jogging itselve press icon ❸ (small step) or ❹ (big step). Current positions of all motors are displayed in the middle of jogging screen, see point ❼. While jogging, it is possible to return to the main screen to adjust any sewing parameters. The new parameters are effective immediately.

To access sewing area better, icons ❾ and ❿ can be used.



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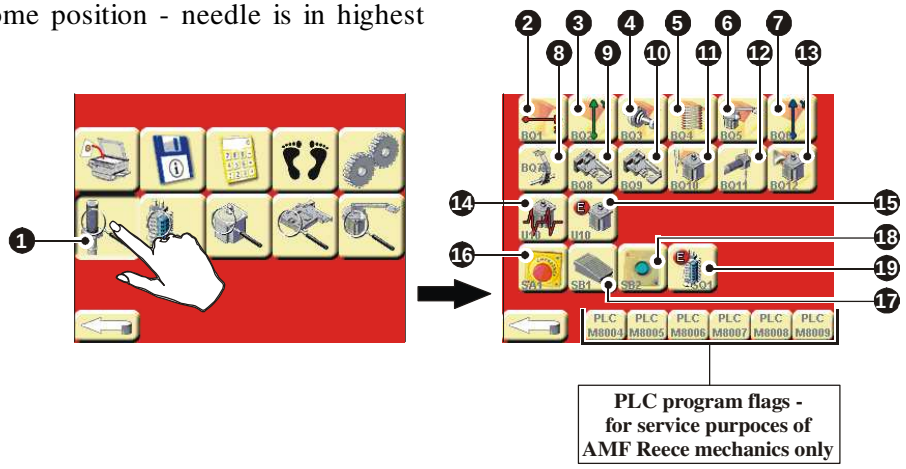
5.7 SENSOR TESTS

Sensor test screen enables user to check functions of all sensors. To enter sensor test screen press icon ❶ on the service menu screen. Sensor test screen is protected by password level II, see section D 5.2.

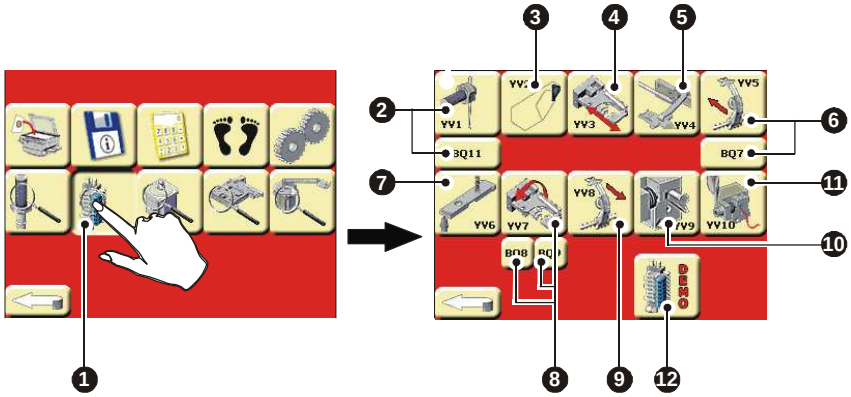
❷ - X axis home position
❸ - Y axis home position
❹ - Thread tension home position
❺ - Home position of chuck vertical movement
❻ - Button loader home position
❼ - Home position of chuck horizontal movement
❽ - Tongue position for material clamping
❾ - Horizontal chuck position
❿ - Vertical chuck position
⓫ - Servo home position - needle is in highest position
⓬ - Therading device
⓭ - Servo home position - lopper basic position
⓮ - Servo motor movement control pulses
⓯ - Servo error
⓰ - Emergency stop
⓱ - Pedal
⓲ - Start button
⓳ - Low air pressure



5.8 VALVE TESTS

Vavle test screen enables user to check functions of all valves including relevant sensors. To enter valve test screen press icon ❶ on the service menu screen. Valve test screen is protected by password level III, see section D 5.2.

❷ - Threading device
❸ - Eye-guard cover opening
❹ - Chuck closing
❺ - Fabric holder
❻ - Tongue closing
❼ - Top needle bar lifting
❽ - Chuck rotation
❾ - Tongue opening
❿ - Thread trimming
⓫ - Thread blowing system
⓬ - All valves demo



5.9 SEWING MOTOR TEST

The sewing servomotor test screen enables the user to test function of main sewing servo motor. Sewing drive motor test screen is protected by password level III, see section D 5.2. To enter sewing servomotor test screen press ❶ on the service menu screen.

Please note that before using any of screen functions it is **necessary to close eyeguard cover** by pressing icon ❷ on sewing servomotor test screen.

Icon ❸ is used to activate/deactivate servomotor. Servomotor is activated , servomotor is deactivated . In case the servomotor is deactivated, the hand whel can be used to perform the servomotor movement.

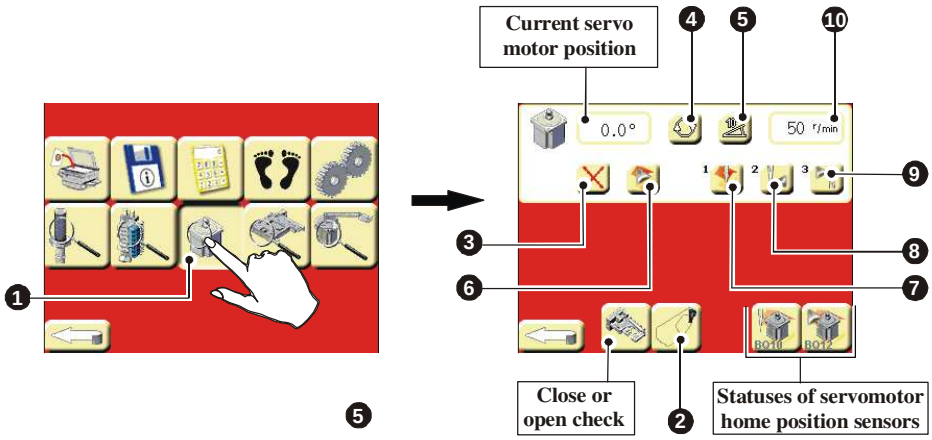
Icon ❹ is used to start/stop continous movement of servomoor.

Icon ❺ is used to move servomotor for 10 degrees only.

Icon ❻ is used to set looper basic position; it means initial position for sewing.

Icon ❼ is used to set servomotor home position, where needle is in its highest position. This icon together with icon ❽ (icon to set upper looper position) an icon ❾ (icon to set lower looper position) is used to adjust loopers position, see section E 6 for more details.

Icon ❿ is used to set rotation speed for testing the servomotor. This preset speed is used for functions ❹, ❺, ❽ and ❾.



5.10 X-Y MOVEMENT MOTORS TEST

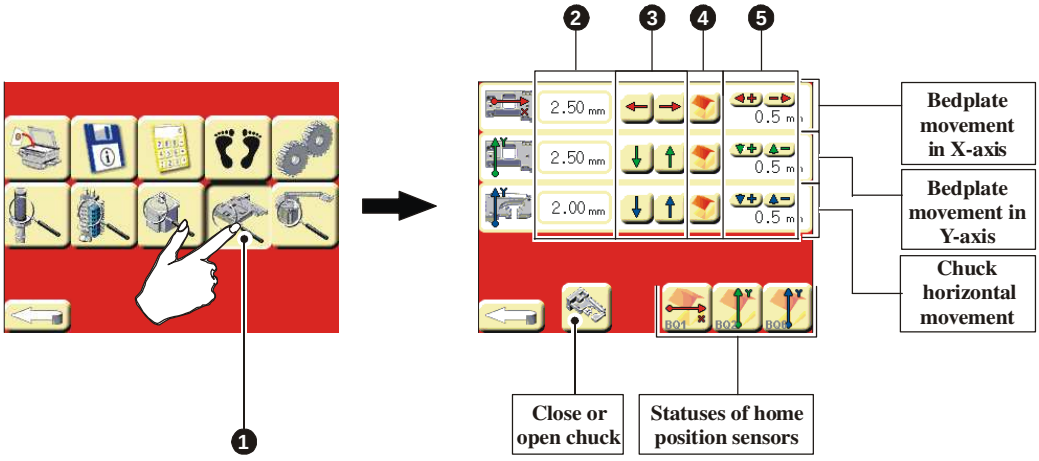
X-Y movement motors test screen enables user to adjust and test bedplate movements in X and Y axis and chuck movement in Y axe. X-Y movement motors test screen is protected by password level III, see section D 5.2. To enter X-Y movement motors test screen press icon ❶ on the service menu screen.

Information in point ❷ provides user with current positions in X, Y axis.

Icons in point ❸ are used to test X-Y movements in all directions.

Icons in point ❹ are used to set home position in case position of screening is changed.

Icons in point ❺ are used for electronic adjustments of home position within the range ± 1,5 mm.



5.11 OTHER MOTORS TEST

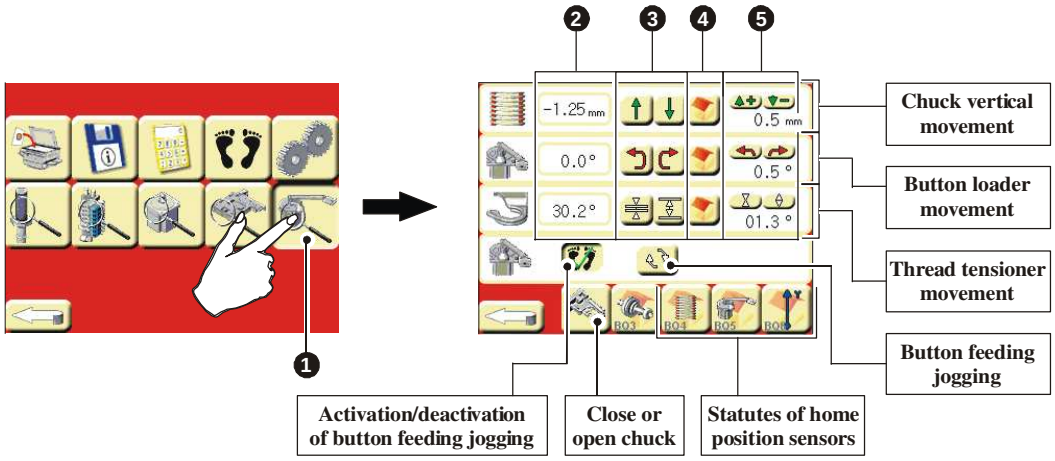
Other motors test screen enables user to adjust and test button feeding motors and thread tension motor. Other motors test screen is protected by password level III, see section D 5.2. To enter other motors test screen press icon ❶ on the service menu screen.

Information in point ❷ provides user with current vertical position of chuck, button loader and thread tension position.

Icons in point ❸ are used to test particular movements in all directions.

Icons in point ❹ are used to set home position in case position of screening is changed.

Icons in point ❺ are used for electronic adjustments of home positions within the range ± 1,5 mm for vertical chuck position, ± 5,0° for button loader and ± 1,5° for thread tension.



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E - MACHINE ADJUSTMENT

Caution: - all the adjustments must be carried out only after turning off the main switch
- non-professional actions can damage the electric regulation and also the mechanism in the machine

Warning: - follow the safety regulations valid in the particular plant
- during the adjustment it is advisable to take out the needle for those procedures where there is no thread adjustment

1. SET PROGRAMMES FOR SEWING THE BUTTON PATTERN

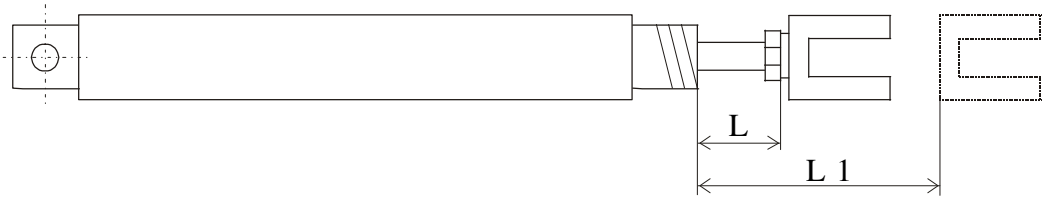
The programmes **95 - 99** are programmed by default by manufacturer according to section **D** - see the table.

SCREEN	OPERATION	STANDARD	DEFAULT PROGRAMME				
			95	96	97	98	99
Button type adjustment D 2.1	1. Sewing type						
	2. Stitching				-		
Adjustment of parameters of the button with holes D 2.2	1. Span X	3,6	3,6	3,6	-	3,6	-
	2. Span Y	3,6	3,6	3,6	4,5	3,6	-
	3. Number of stitches	4	4	4	4	4	-
	4. Button height	1,2	1,2	1,2	1,2	1,2	-
Adjustment of parameters of the shank button D 2.3	1. Distance between stitches	-	-	-	-	-	0,2
	2. Number of sewed stitches	-	-	-	-	-	4
	3. Shank position	-	-	-	-	-	3
Adjustment of parameters of sewing the neck D 2.4	1. Neck height	3,3	3,3	3,3	3,3	3,3	2,3
	2. Number of stitches	8	8	8	8	8	7
	3. Starting position	1,0	1,0	1,0	1,0	1,0	0
	4. Finishing position	0	0	0	0	0	0
Adjustment of the shown/blind stitch D 2.5	1. Stitch type						
	2. Blind stitch depth	0,6	0,6	0,6	0,6	0,6	0,6
	3. Shown stitch depth	0,9	0,9	0,9	0,9	0,9	0,9
Adjustment of stitchings D 2.6	1. Number of startingstitchings	2	2	2	2	2	2
	2. Number of finishing stitchings	2	2	2	2	2	2
Adjustment of the thread tension D 2.7	1. At sewing the button	4	4	4	4	4	15
	2. At sewing the neck	14	14	14	14	14	20
	3. At sewing stitch shown	4	4	4	4	4	6
	4. At sewing the finishing stitching	8	8	8	8	8	8
Adjustment of the sewing speed D 2.8	1. At sewing the button	200	200	200	200	180	200
	2. At sewing the neck	200	200	200	200	180	200
	3. At stitching	180	180	180	180	160	180

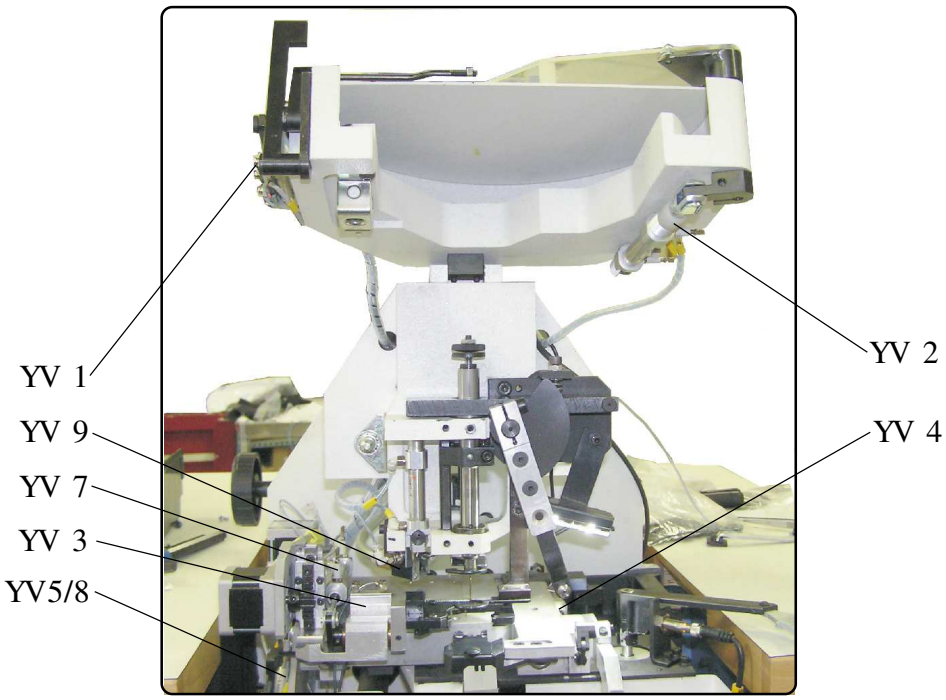
E - MACHINE ADJUSTMENT

2. PNEUMATIC CYLINDER ADJUSTMENT

It is advisable to mount the cylinders of pneumatic regulation with mounting forks (or with the necessary parts) for the basic mounting of mechanical parts (or for the replacement of parts) in accordance with the following review:



DESIGNATION	FUNCTION	L	L1	NOTE
YV 1	THREADING CYLINDER	9		
YV 2	EYE GUARD CYLINDER		23,5	VLOŽKA 71.1661.8.044
YV 3	JAWS CYLINDER			
YV 4	PIECE HOLDER CYLINDER	8		NASTAVENO VE STROJI
YV 5/8	TONGUE CYLINDER	11		MÁ DVĚ FUNKCE
YV 7	BUTTON TURNAROUND CYLINDER (DIF. AXIS)	11		
YV 9	CUT OFF CYLINDER			



Warning: During the warranty period do not adjust the yellow parts and follow the safety regulations valid in the particular plant.

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E - MACHINE ADJUSTMENT

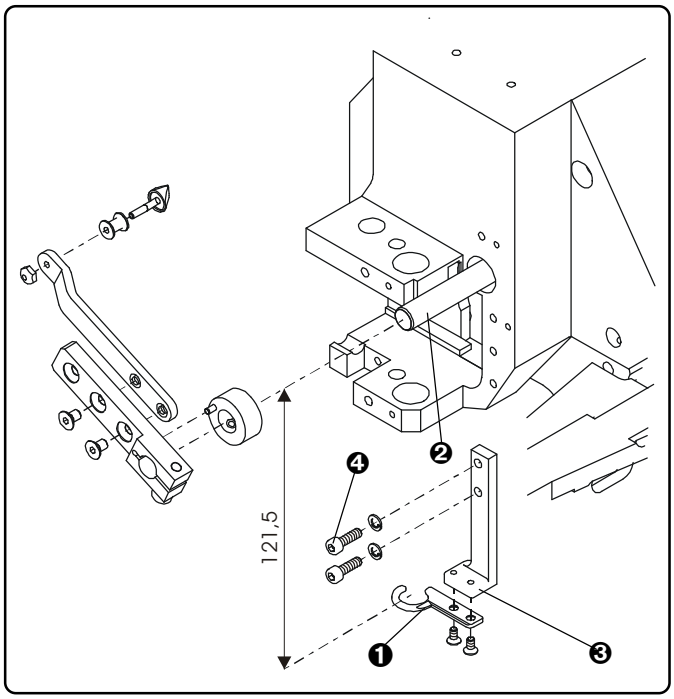
3. HEIGHT ADJUSTMENT OF NEEDLE BARS

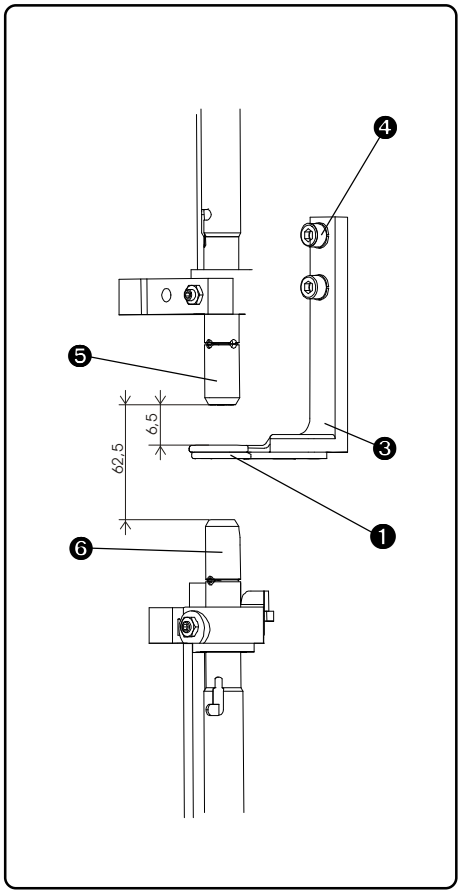
3.1. If you need to adjust the height of needle bars use the basic adjustment of the needle tensioner ❶ , its lower surface must be in the distance of app. 121,5 mm from the axis of the drive shaft ❷ of the upper looper. Fix the tensioner holder ❸ in this position by using the screws ❹.

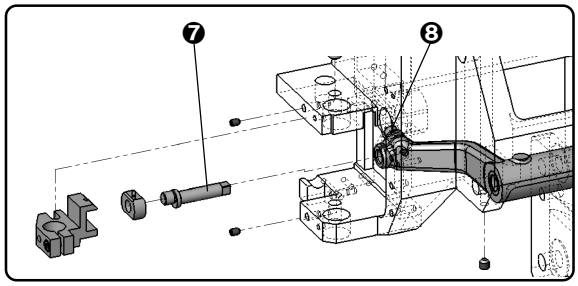
3.2. If you turn the hand wheel it lifts up the upper needle bar ❺ into its uppermost position. In this position the lower edge of the needle bar is in the distance of 6,5 mm from the upper surface of the thread tensioner ❶. In the adjustment use the excentr ❼ of the drive lever, you can turn it after loosening the catch ❽. When you adjust it tighten the screw ❽ again.

3.3 Adjust the height position of the lower needle bar ❻ in the position according to point 4,2, use the excentr of its drive lever so as its upper surface is the distance of 62,5 mm from the surface of the upper needle bar. **Check**: When you placed in the needle, check the shifts of the needle between the particular needle bars. The movement clearance of the needle is 0,4 - 1,2 mm.

Warning: The needle bars must be cleaned at least once a week or after 80 hours hours of operation according to section **F1**.







E - MACHINE ADJUSTMENT

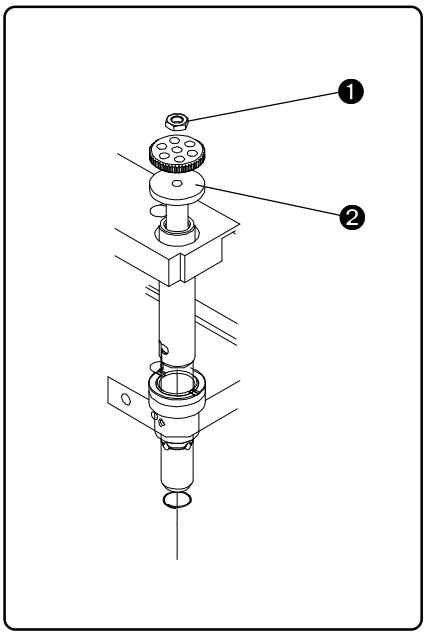
4. ADJUSTING THE NEEDLE RELEASE

4.1. When the needle is in the upper needle bar turn the handwheel so as the needle is in the position after shifting into the lower needle bar.

4.2. Slightly turn the handwheel back and forwards to test id the needle releases from the upper needle bar.

4.3. Loosen the nut ❶ on the upper part of the needle bar. Turn slightly the adjusting nut ❷ anticlockwise by a quarter turn when seeing it from above BQ1 - OSA X eases. Turn back the nut clockwise until the needle releases in the transfer point. Turn it clockwise by another halft turn. Tighten the nut ❶.

4.4. Carry out the same adjustment also in the lower needle bar to release the needle from the lower needle bar into upper needle bar. Slightly move the handwheel forward and backwards to be sure that the needle is shifed properly from one needle bar to another.



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E - MACHINE ADJUSTMENT

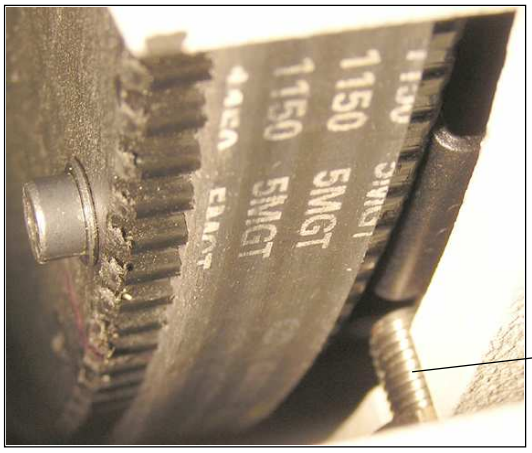
5. ADJUSTING THE MACHINE´ S SENSOR SHUTTER

The adjustment of sensor shutters is important for proper operation. You can access them if you remove the covers. The sensors are set by default in the factory and are marked by a clolour. The standard distance: shutter - sensor is always 0,3 mm.
After coarse adjustment adjust the particular mechanism according to the review in the following chapters, use the adjusting elements on the display.

DESCRIPTION	FUNCTION	ADJUSTMENT	NOTES
BQ 1	PLATE SENSOR - X AXIS	12,4	DETAIL A FROM THE SHUTTER EDGE TO PLATE
BQ 2	PLATE SENSOR - Y AXIS	36	DETAIL B FROM THE SHUTTER EDGE TO LINE WIRE
BQ 3	THREAD TENSION		INCATES THE UPPER DEAD-CENTRE OF MECH. SEE E10
BQ 4	STEERING THE CHUCK	84	FROM THE UPPER EDGE OF SENSOR - DETAIL F
BQ 5	BUTTON LOADER		SENSOR TOWARDS THE AXIS OF THE LOADER SHAFT
BQ 6	CHUCK SURFACE	42	DETAIL C FROM EDGE THE HOLDER TO SHUTTER
BQ 7	TONGUE	33	LIGHTS WHEN THE FORK IS PUSHED TO SHUTTER
BQ 8	VERTICAL POSITION OF THE CHUCK		INDICATES THE BACK SENSOR
BQ 9	HORIZONTAL POSITION OF THE CHUCK		SENZOR NEARER TO THE OPERATOR
BQ 10	BASIC POSITION OF THE CAMSHAFT		INDICATES THE UPPER NEEDLE BAR IN UPPERMOST POSITION
BQ 11	THREADING		IN HORIZONTAL POSITION OF THE SENSOR TURNS OFF - DETAIL D
BQ 12	POSITION OF LOOPERS		

Adjust the basic position by pressing - the needle bar turned towards the upper dead-centre.

The buttons / on the screen turn off the servo print ➡ .
There the sensor **BQ 10** - should be lit - carry out the adjustment by adjusting the shutter of the camshaft after loosening its screws and by pressing the button you switch to the looper adjustment. Fix the basic position by the controlled **BQ 10**.

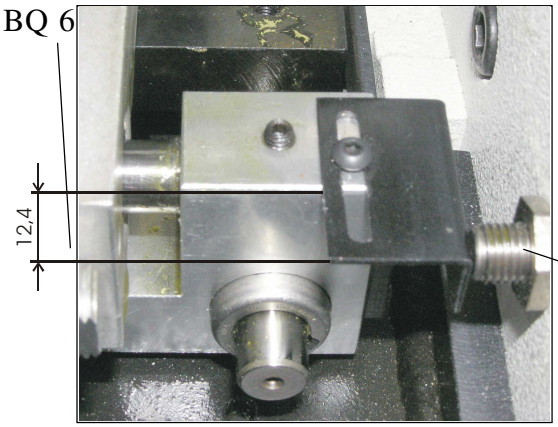


POSITION OF SENSOR BQ 10

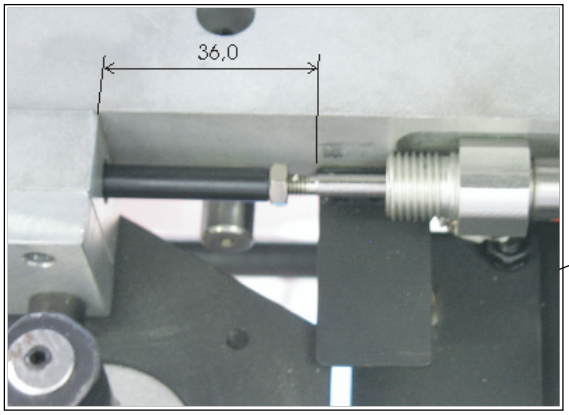
Turn the handwheel and place the upper needle bar into the uppermost position of „the upper dead-centre“. Now the lower edge of the shutter must switch off.

BQ 10

E- MACHINE ADJUSTMENT



POSITION OF SENSOR BQ 1

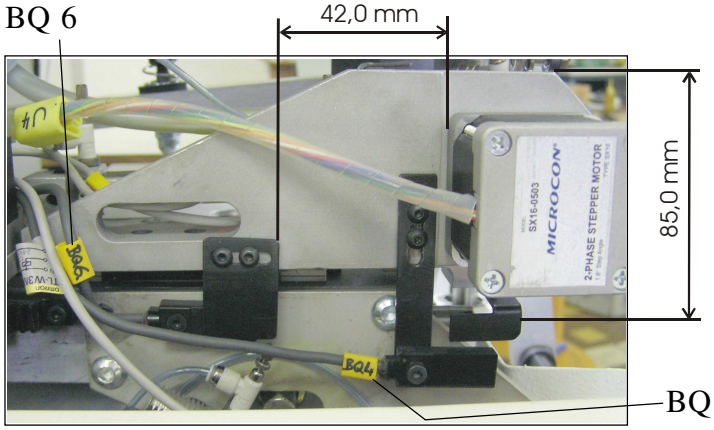


POSITION OF SENSOR BQ 2

The extent changes from the block to the left edge of the shutter.

POSITION OF SENSOR BQ 3

1. Tension into the upper dead-centre.
2. Move the shutter towards the sensor until the sensor recognizes it (the LED light s up).



POSITION OF SENSOR BQ 4, BQ 6

The extent changes from the milling edge to the right edge of the shutter.

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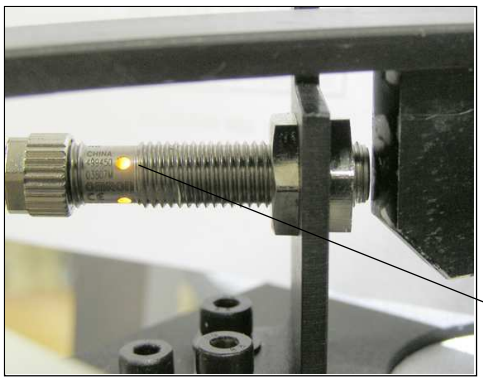
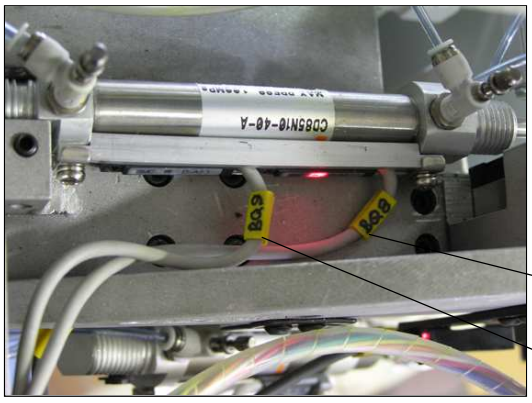
E - MACHINE ADJUSTMENT



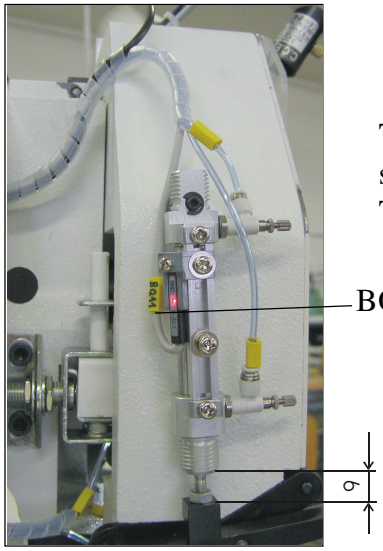
POSITION OF SENSOR BQ 5

POSITION OF SENSOR BQ 4, 7



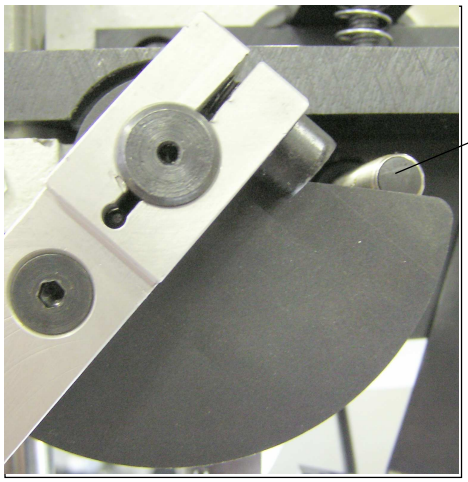
POSITION OF SENSOR BQ 8, 9

E- MACHINE ADJUSTMENT



POSITION OF SENSOR BQ 11

The sensor is used to read the upper position of the threading hook. The sensor light up when the hand lever of the threader is in horizontal position. The distance between the piston and the stirrup is 9 mm.



POSITION OF ENSOR BQ 12

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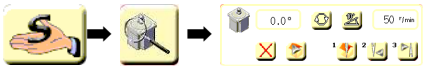
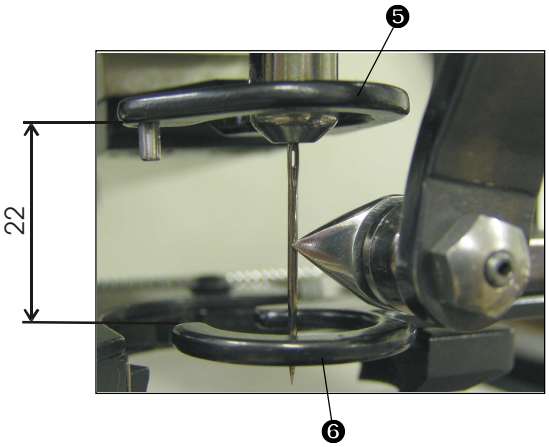
E- MACHINE ADJUSTMENT

6. LOOPER ADJUSTMENT

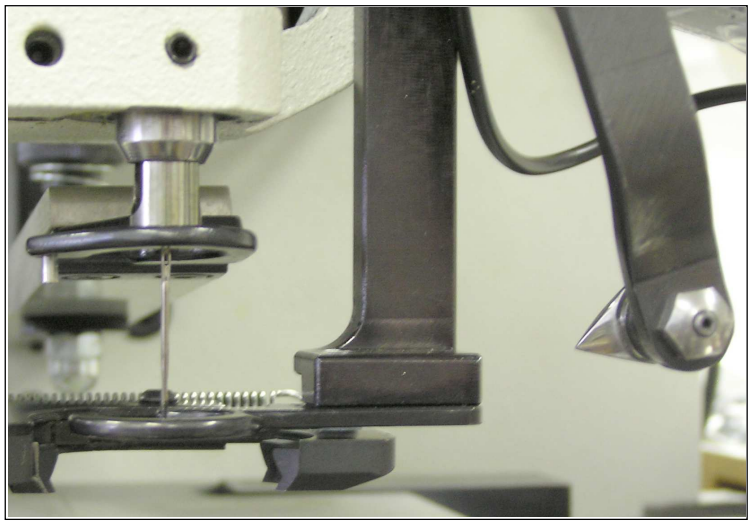


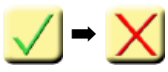


6.1 Press the button on the protective cover . The cover shuts down. If you want to adjust the basic position of the looper, press the button and . In this position adjust the tip of the looper into the central part of the needle. Adjust it by a guide ring and a catch on the looper lever. Between the looper, shutter and guide ring there must not be any clearance. Check the correct distance - 0,3 mm between the shutter and the sensor **BQ 12**. The distance between the looper tip and the needle - 0.1 - 0.3 mm.

Fig. 1

Fig. 2



6.2. Adjust the lower looper after you have pressed the button and adjust the lower looper in the same way as in 6.1 - see Fir. 1. When you press the button , the machine is adjusted into its basic position - see Fig. 2 - for the correct position of the loopers towards the cover! Turn off the servo by pressing  .

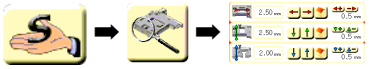
Warninng!! Suring the adjustment of the lower looper you must observe the order of the adjusting buttons:

1. , 2. , 3. .

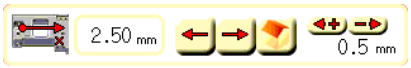
Do not use the simplified way 1. and 3. . The machine sets the wrong position then.

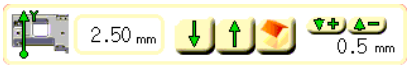
E - MACHINE ADJUSTMENT

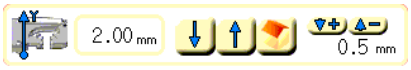
7. ADJUSTING THE SEWING MACHINE



7.1. Put the adjusting gauge into the chuck, use tweezers with a central hole (you are on the screen of the plate). Move the needle in the upper needle bar towards the gauge by turning the handwheel. Change the deviation from the central hole by using the buttons on the plate position.

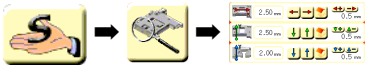
7.2. On the X axis  of the plate with buttons .

7.3. On the Y axis  of the plate with buttons .

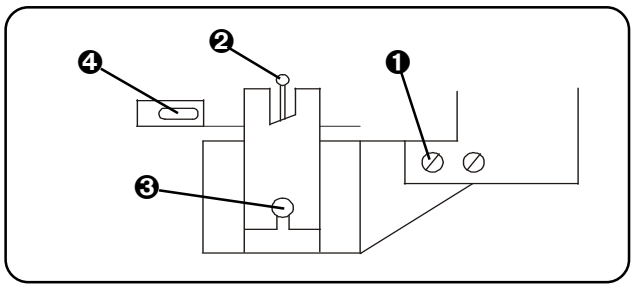
7.4. On the Y axis  of the chuck with buttons .

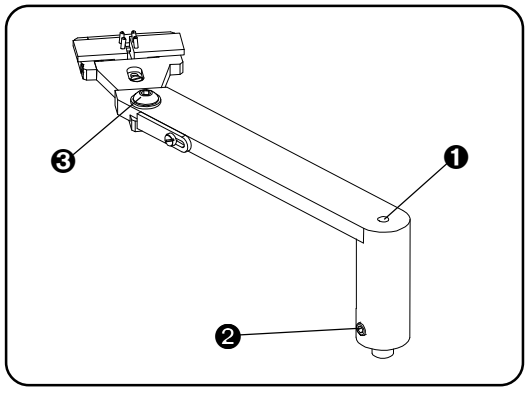
7.5. Lift up the needle with the needle bar, take out the gauge . Press any button and the set values will be stored.

8. STOPPING THE FABRIC



8.1. On the same screen move the needle in the position when you shift it into the lower needle bar. Adjust the stopping ❸ in the X axis into the middle ❷ part of the needle, use the screws ❶.





8.2. Lift up the needle into the place where it is released from the lower needle bar. Use the gauge ❹ put into the edge of the stopping ❸ and check the distance of the needle from the gauge in the central part. Change the clearance 0,1 mm using the buttons .

8.3. Check the Y axis of the chuck (see chapter 7.4). After you have put in the gauge, lower the needle into the hole on the gauge, use the buttons (see chapter 9). Press any button and the set values will be stored.

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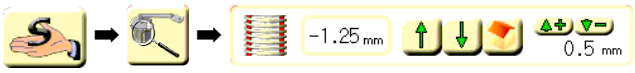
E - MACHINE ADJUSTMENT

9. ADJUSTING THE CHUCK HEIGHT

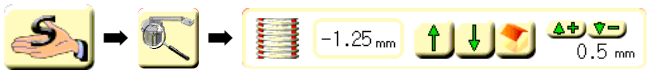


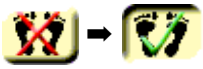
9.1. Press the button 4x, in this way lower the chuck into its lowest position so as the distance between the chuck and the stopping of the fabric is min. 0,1 mm when you check it. Press the button after the adjustment.

10. ADJUSTING THE BUTTON LOADER

On the same screen that you used for the adjustment of the chuck height adjust the loader. The original programme **95** is set. press the emergency stop button. The jaws are up and are open. Turn the lever with the loader manually under the chuck and check the height above the stopping of the material. The recommended height is 0,1...0,2 mm. If you need to adjust it, use the catch ❶ in the loader shaft after you have loosened the securing screw ❷. Move back the lever manually. The basic position is indicated by a lit sensor. Turn on the emergency stop button and turn off the servo

. Use the buttons and switch back to the main screen.



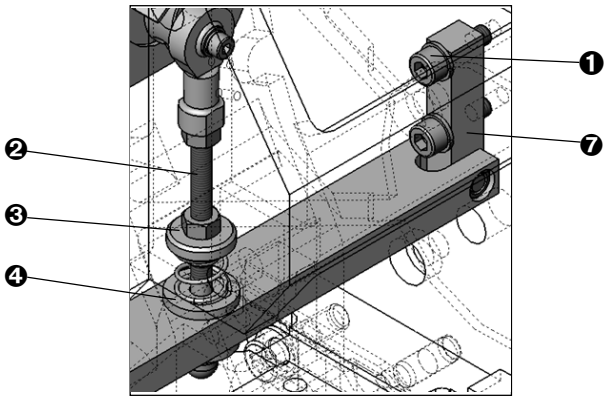
Put a 5-hole gauge from the accessories onto the loader. Activate the stepping of button loading by suing the  . Press 4x, the loader with the gauge moves under the chuck and the chuck lowers to the level of the gauge. By using the corrections for the loader adjust the angle position of the loader with the gauge so as the central hole in the roughly corresponds with the position of the needle on the Y axis. On the X axis adjust the gauge by changing the position of the button holder on the lever. After you loose the screw ❸ by pressing the button the chuck presses the gauge.

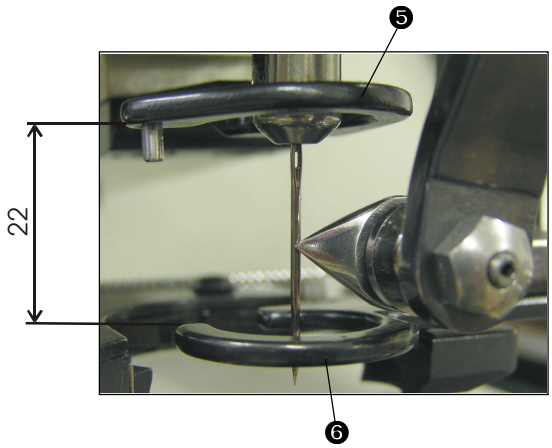
Now tighten the screw. 3x The gauge is in the chuck, the loader moves to its basic position. By pressing the button release the gauge and put it back onto the holder.

Check: By pressing the button and adjust the repeated pressing of the gauge by the chuck and the loader moves back again.

11. ADJUSTING THE CLAMPING LEWER OF THE THREAD TENSION

The screen stays in the area of the neck - by pressing the button 2x . The loader is adjusted in the central position of the screw ❶.



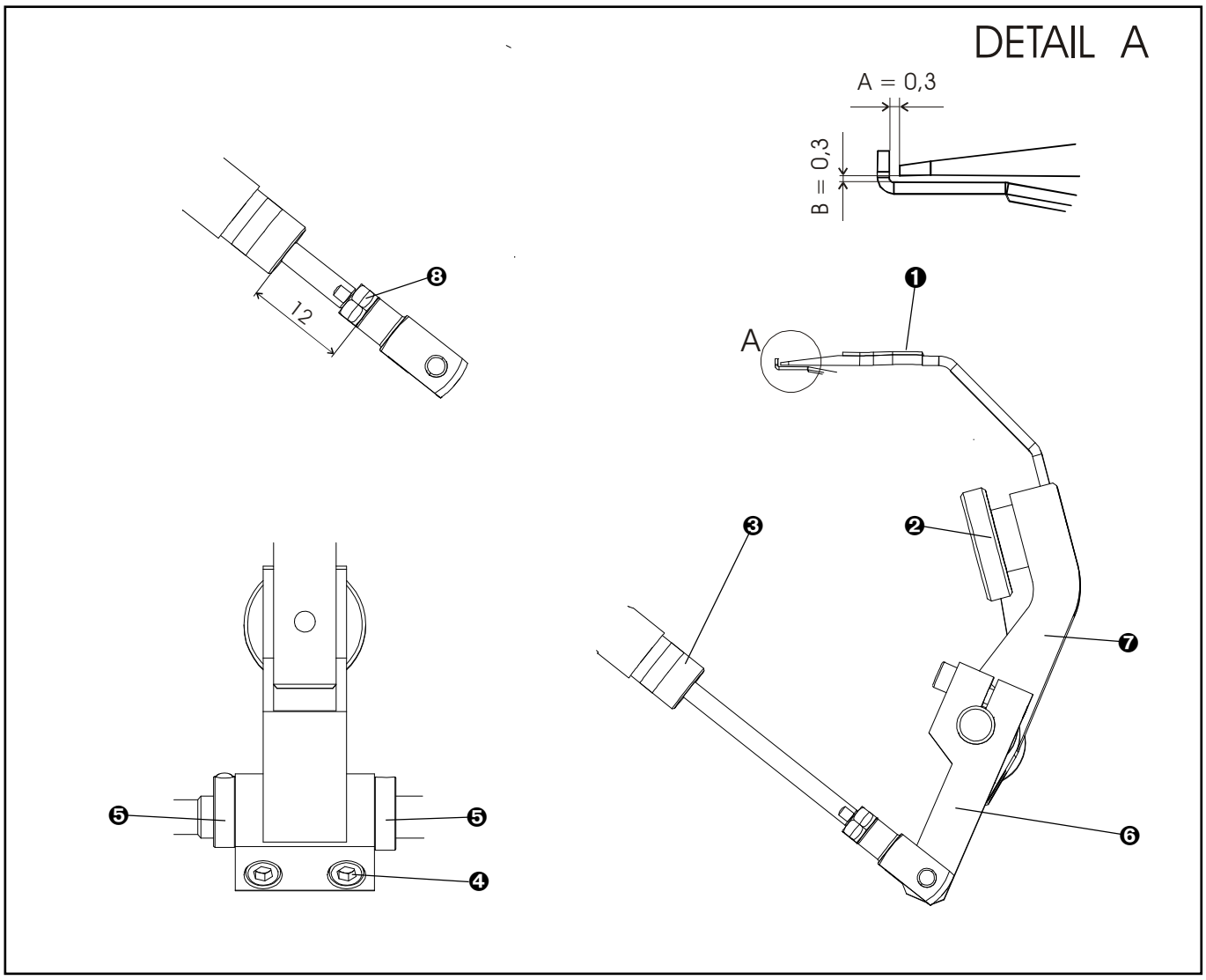


Screw the screw ❷ into the shank as far as possible, tighten the nut ❸ by one more turn after pressing the spring ❹, the distance between the stirrup ❺ and the clamp ❻ must be 22 mm. The machine is its basic position. To carry out the function you must align the bearing stirrup ❺ of the clamping pressure lever with the tensioner ❻ without any clearance and angularly too. Adjust the height after you have loosened the screw ❶ by moving and tilting the lever holder ❼.

Adjust the necessary distance of 22 mm by the help of the sensor **BQ 3** and the shutter according to the chapter **E5** after loosening their screws. After every adjustment of the shutter press 2x, check the correct minimum tension by placing the used thread between the bearing surfaces of the part ❺ and ❻. The pressed thread does not unweave when it is being pulled, and does not unweave when it is being pulled, and does not move freely in any point of the contact of parts. Correction by the buttons and . Lift up and detach the end parts ❺ and ❻ by pressing . The pressed thread is released.

E - MACHINE ADJUSTMENT

12. POSITIONING THE TONGUE OF THE SEWED PIECE

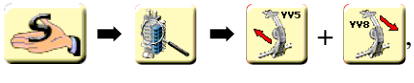


12.1. Loosen the screws of the rings ❺ on the lever ❻ and the catches ❹ on the tongue lever ❼ , centralize sidevard the tip of the tongue towards the centre of the fabric stopping, and tighten the screws of the rings ❺ so as the lever between the rings has no clearance.

12.2. Adjust the cylinder in its closed position (the tongue is lift off from the fabric stopping) by the catch ❽ . Adjust the distance of 12 mm between the cylinder and the fork (see Fig.).

12.3. Adjust lineary (for the traditional fabric 1x TESIL) the top of the tongue ❶ to...= 0,3 mm. In this adjustment the cylinder piston ❸ is maximally pushed out from the cylinder. Detent the adjustment by tightening the catches of the lever ❼ .

12.4. After loosening the screw ❷ you can adjust the tongue lineary to B = 0,3 mm.

Check: It is useful to use procedure with buttons  , for bringing nearer and away the tongue of the fabric stopping!

F- MAINTENANCE

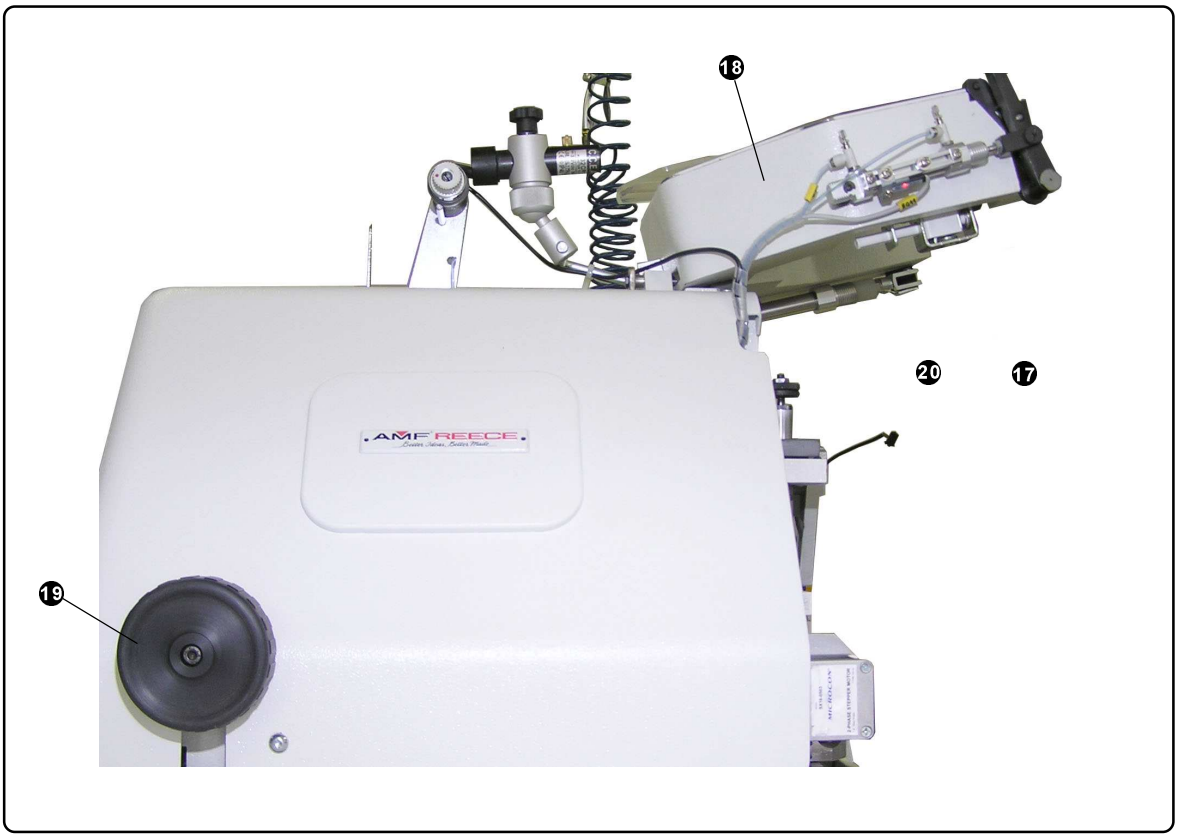
CAUTION!
- Check the condition of telectric wires if they are not damaged.
- Check if the protective covers are not damaged. Replace the damaged covers or order new ones.
- Never put your fingers into the area of the sewing needle.
- Do not modify the machine in a way that can shut off the safety elements of it.

WARNING!
- Do not fail to carry out regular maintenance works.
- Clean the needle bars on a regular basis.
- If the power disruptions occur, switch off the machine.
- Do not damage, modify or remove the safety labels.
- Do not operate the machine if you are intoxicated.
- Ensure the lighning of the working area of at least 750 luxes.

1. CLEANING AND MAINTENANCE OF THE MACHINE

1.1. Shut off power supply and the air inlet.

1.2. If you want to carry out cleaning and greasing, lift up the upper cover of the looper ⓲. After loosening the screw ⓱ so as it is secured by the latch ⓴. You can turn the sewing mechanism by turning the handwheel ⓳.



WARNING!
In this position of the cover the threading hook is without the cover and have this in mind because it can cause injuries.

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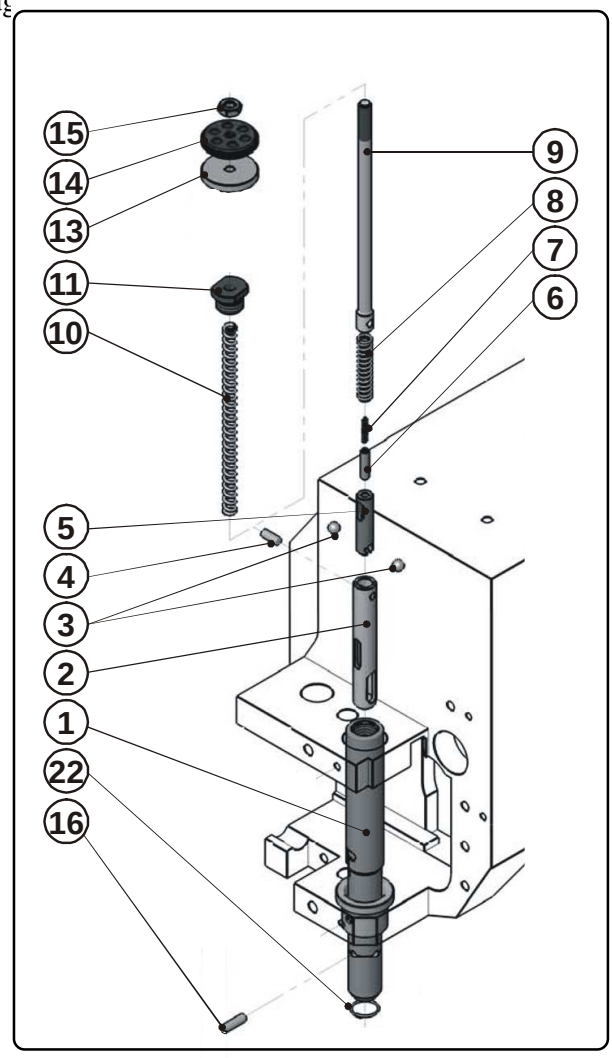
F - MAINTENANCE

1.3. Clean the fabric remains from the sewing area. It is inevitable to clean and check the needle bars as often as possible (see fig.). If the threading hook moves round the eye of the needle it indicates the improper operation of the needle bar. It is advisable to follow this procedure:

Switch off the machine, check the position of the looper, lift up the cover, take out the needle, place thelooper
to the left (for 9 hours).
Loosen the screw of the clamp on the needle bar guard, turn right the needle bar and push it out its guard. Loosen the nuts ⓯ and ⓮ and take it out with its rubber insert ⓭. Use the 3/8 wrench and Sika pliers. Loosen the nut no. 11 with the wrench ⓫ and take out the spring ⓾. Take out the securing ring ㉒ from the needle bar groove and push out the pin ⓰. Slowly take out the case in upward direction ❶. Mind the balls ❸. Take out the pin ❹, this releases the bar ❾ and push out the insert in upward direction ❷. At the same time remove the damage parts of the spring ❼. Clean the piston, check its edges and polish the possible wear. If it is not possible to clean the opening, replace the piston because it can damage the needle tip and the piston opening.
Clean all the demounted parts, eventually wash them with petrol or spread little oil on it. The piston in the case ❺ must move easily! Put a new spring ❼ into the piston ❻ and put it in the guide ❺. It must be pushed there easily!
Put in the spring ❽ and push the bar head ❾ into the guide - secure it with a pin.
Slide the set into the case ❶ with the bevel in bacward direction through the ball against the left bayonet removal of the case.
Partially insert the balls ❸ and pull the case to the edg

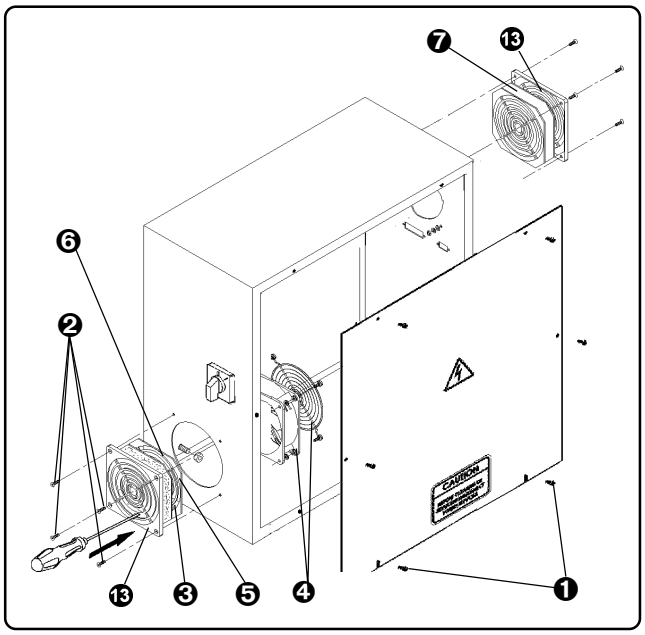
By using the opening of the pin the case ❶ check the spring´ s ❼ put in the pin ⓰ with its surface facing the spring and secure it with a securing ring ㉒.
Put in the spring ⓾ ans secure it with a nut ⓫ . Adjust the stopping ⓭, the nut ⓮ and the securing nut ⓯. Put into the machine and tighten the screw. Place the needle and tighten the nuts ⓮ and ⓯ according to section **D**.
In a similar way check the lower needle bar after you have opened its cover. The lower looper is then on the right side (for 3 hours).



1.4. Grease the machine according to section **F3**.

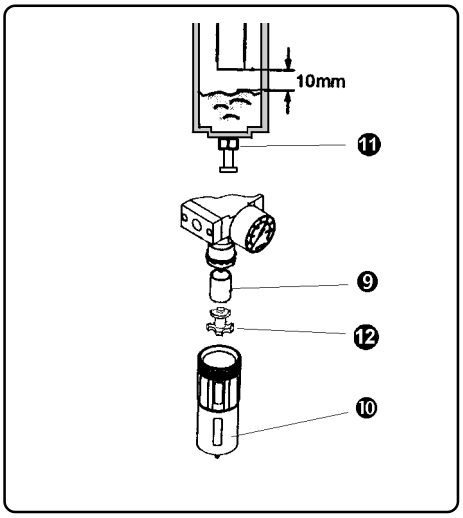
1.5. Cleaning the fan:

Loosen the screws ❶ on the control cabinet, use a cross screwdriver. Loosen 4 screews ❷ on the fan grid ❸, use a cross screwdriver. *ATTENTION!* When loosening the last screw hold the fan with the grid ❹ inside the cabinet to avoid its fall into the control cabinet. Put the screwdriver into the aperture on the grid ⓭, press it through the cleaning insert ❺ and then push out the plastic cover of the grid ❻. Take out the cleaning grid. Take out the cleaning grid. Shake or draw out the insert, in case of larger dirt wash in a detergent. Carry out similar maintenance also on the back fan ❼.



1.6. Maintenance of the air regulator

It includes ***the check of the condensate*** and the possible replacement of the filtering patron ❾. The level of the condensate inside the sludge pit ❿ should not reach the level above 10mm under the level of the filtrating patron ❾. The lower nut collar ⓬ signalizes this height. Loosen the emptying screw ⓫ to drain the conensate and then tighten the screw again.



If the air flow worsens:

Replace the filtrating patron ❾ after you have shut off the air inlet. Screw out the sludge pit ❿ anticlockwise and vent. Unscrew the nut ⓬, this releases the filtrating patron ❾, replace it with a new one and then mount the device in the reverse order.

1.7. Vissually check the mechanism, mainly in the area of the sewing mechanism. No threads and fabric can be left in this area.

1.8. Put the covers in their operating position and check the machine operation according to section **C4**.

F - MAINTENANCE

2. PERIODIC MAINTENANCE

once a day (8 hours of operation)	-	cleaning of the sewing mechanism area and inner frame of the machine
once a week (40 hours of operation)	-	visual check - external and internal mechanism
	-	lubrication of needle bar and sewing mechanism
	-	fill oil into reservoir with oil level indicator
once a month (300 hours of operation)	-	check the clearance in sewing mechanism drive
	-	check the screw connections tightening (obtain values below)
	-	check the condensate in regulator
	-	check the waste oil reservoir

Recommended values for screws tightening (Nm)

M3	0,5	0,6	0,8
M4	1,2	1,5	2,0
M5	2,5	3,0	4,0
M6	4,0	5,0	7,0
M8		8,0	16,0
M10		10,0	30,0

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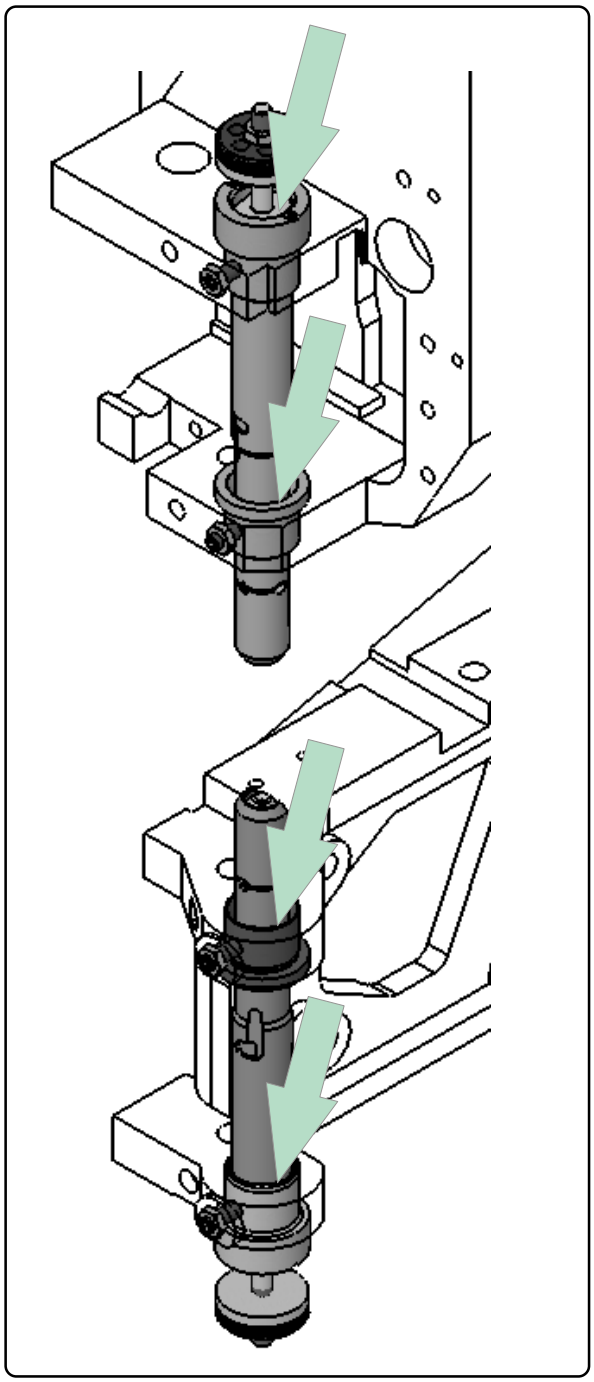
Phones: +420 582 309 146 (Service), +420 582 309 286 (Spare Parts); Fax: +420 582 360 606

3. MACHINE GREASING

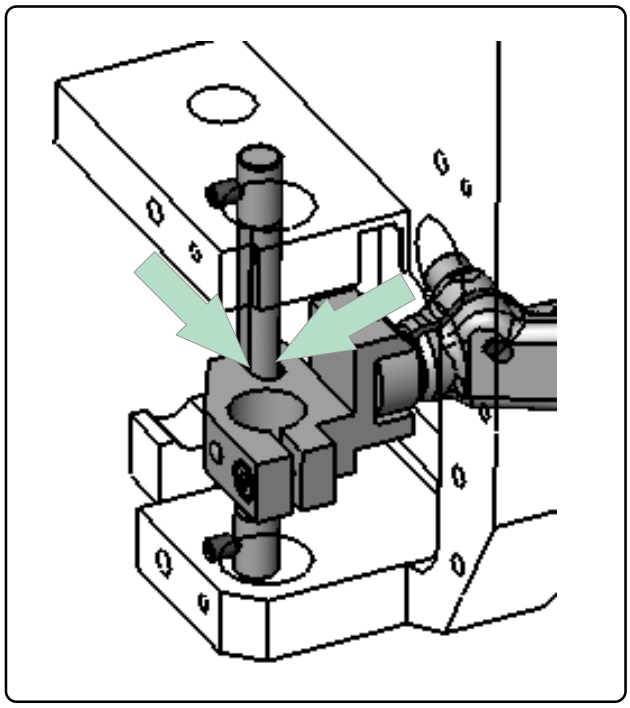
3.1. Before the use of the machine you must remove the preserving oil. Then is necessary, before the first use or after a longer period of time when the machine is not used, to grease the following places. You can use the greasing oil ESSO TERESSO 32 or oil with similar characteristics.

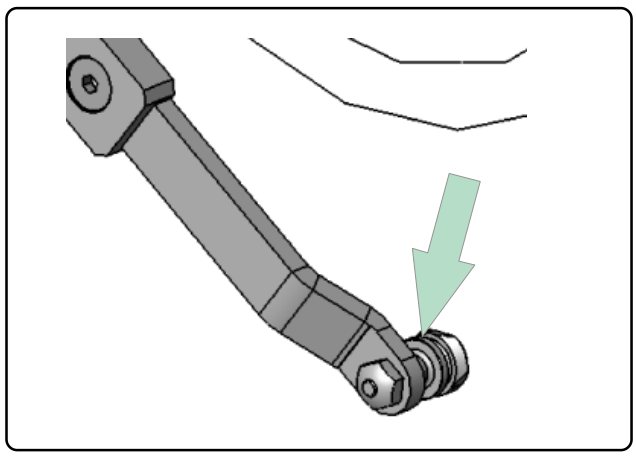
3.2. Grease the bearings and guards of the needle bars, rollers on the loopers. You can carry out greasing of the needle bars and loopers after you have opened the needle bar s covers.

3.3. Grease the gearing after the plate dismantling 1x after 50,000 hours or once a year.



Note:
Too much oil can leak out in the area of the needle bar and can stain the sewed piece.





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4. MACHINE DISPOSAL

4.1 To ensure machine ecological disposal it is necessary to remove especially nonmetallic parts from the machine. To take these parts out, it is necessary to perform the partial dismantling of the machine, remove covers, dismantle the machine arm and remove the frame.

4.2. Aluminium and duralumin parts must be treated separately, also nonferrous metal parts and plastic parts.

4.3. Parts mentioned in point 2 can be found in the spare parts manual with these marks:

- ● aluminium parts
- ●● non-ferrous metal parts
- ●●● plastic and non-metallic parts

TROUBLESHOOTING

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TROUBLESHOOTING

Caution! Check the main parts of the machine on a regular basis and use only parts of high quality. The manufactuter recomends to use the original parts AMF Reece, mainly needles, parts of the needle bar, loaders.

1. INTRODUCTION

The electronic machine EBS MARK II signalizes the error messages when the machine fails to work. If these messages are not displayed and the machine fails to work during the sewing process, it is necessary to check the thread (if it was not damaged by the threading hook) and the needle (if it is not damaged or bent) first. Remove the other signalized failures according to the detailed description in the following section.

Note! It is possible to change the needed adjustment of the machine according to the fabric type and in this way you can compensate the wearing of the machine parts. It is not possible to adjust the mechanisms fixed with yellow during the warranty period without an approval from the manufacturer.

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Phones: +420 582 309 146 (Service), +420 582 309 286 (Spare Parts); Fax: +420 582 360 606

TROUBLESHOOTING

2. FAULTS OF THE MACHINE EBS MARK II

FAULT DESCRIPTION	FAULT LOCATION	FAULT ELIMINATION
Thread tearing	Check all mechanical parts needed for stitching if they are not damaged - looper, stopping of the sewed piece, thread guard, looper track, spring in the needle bar. Check the value of the machine's operating pressure.	Remove all sharp edges by polishing them, eventually replace the parts. Check the proper operation of the roller on the looper. Decrease the pressure to the specified value.
Needles break	Check the needle bars - opening in the damson, piston, cushioning spring. Check the adjustment of the machine for the chosen button.	Demount the needle bars, wash them in petrol, polish the damaged parts, check the opening in the piston and damson, replace the broken cushioning spring. Assemble the needle bars and adjust according to chapter no.**E 3**. Carry out the basic adjustment of the machine according to the provided gauge, then adjust the machine to the chosen button.
Wrong placing of buttons	The buttons falls from the holder. The button is not caught in the	Check the button holder if the clamping pins are not damaged, if the spring in the holder is not broken. Check if there is no foreign body in the holder track. Adjust the button loading according to chapter no. **E 10**.
Skip a stitching	Wrong adjustment of the loopers. Bent needle.	Adjust the loopers according to chapter no. **E 6**. Check the rollers on the looper. Replace the needle.
The machine does not trim threads	Dull cut-off knifes. Clamping string of the mobile knife is cranked. Small tension on the thread guard.	Replace the faulty knives, adjust clamping. Replace the string, adjust clamping. Increase the thread tension by using the auxiliary tensioner on the upper cover of the machine.

TROUBLESHOOTING

FAULT DESCRIPTION	FAULT LOCATION	FAULT ELIMINATION
Wrong tension of the thread when sewing - TENSION	Damaged or dirty mechanism TENSION.	Check the tensioning mechanism. Clean the possible dirt between the chucks of the tensioner, polish the damaged parts or replace them.
	Wrongly adjusted TENSION - mechanically.	Adjust the chucks TENSION by using the catches so as the bearing surfaces are joined in the same level - according to chapter no. **E 9**.
	Wrongly adjusted TENSION - electronically	Adjust the positions and the pressure of chucks TENSION, use the display according to chapter no. **D 4.5**.
Wrong thread feeding	The threads do not go through the threading hose.	Clean the hose with an air brush, event. mechanically remove the dirt from the hose.
	Short end of the thread.	Prolong the time of feeding on the control display - blowout of the thread according to chapter no. **D 3.4.**
Button torn from the chucks	Wrongly placed button.	Reload the button. If the failure occurs again, adjust the button loading mechanism again according to chapter no. **E 10**.
	Wrongly adjusted height of the lower needle bar.	Check the adjustment of the needle bars height so as the lower needle bar dos not hit the button. Adjust according to chapter no. **E 3**.
	High tension of the thread when wrapping the neck.	Decrease the tension of the thread when wrapping the neck. Adjust on the display according to chapter no. **D 2.7**.
	Mechanically damaged chuck.	Repair the chuck or replace the damaged part.
	Wrongly adjusted operational pressure of the machine.	Decrease the pressure to the specified value.

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TROUBLESHOOTING

3. ERROR MESSAGES OF THE ELECTRONIC SYSTEM

If an error message appears on the main display (see. Fig. 1), press the button with the message. Then the screen with the message description appears on the display with the steps how to repair the failure (see. Fig. 2).

Fig. 1

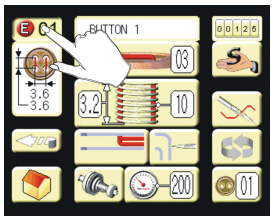
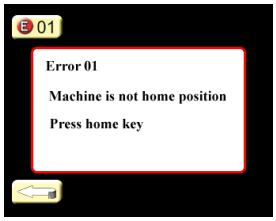


Fig. 2



FAILURE NUMBER	REASON	REPAIR
E 01	The machine is not in basic position - failure is indicated in situations when the machine is in undefined position, i. e. after switching on, using the emergency stop button, test etc.	Push the button “Home”.
E 02	The needle is not in upper position - failure is indicated only when “Permission to reverse the servo when adjusting the basic position” is activated	Turn the handwheel in the direction of sewing - if you reach the desired position, the servo supply is activated and then you cannot turn the wheel anymore.
E 04	Low air pressure - air pressure is not within the range of 5 - 6 bars.	Check the connection to the compressed air inlet and the desired air pressure, in case it is well check the proper operation and connection of manometer (sensor SQ 1 on the screen “Inputs test”.
E 10	Time for the adjustment of the X axis position of the table is over - when adjusting the basic position	Check proper operation (screen “Inputs test”) and position (0.3 mm from shutter) of the basic position sensor (BQ1 for X, BQ2 for Y), operation and proper connection of the motor (screen “Plate movements motor test”)
E 11	Time for the adjustment of the Y axis position of the table is over - when adjusting the basic position	
E 12	Time for the adjustment of servo drive position is over - when adjusting basic position or when searching the starting position for sewing	Check proper operation (screen “Inputs test”) and position (0.3 mm from shutter) of sensors of the basic position of servo drive (BQ10 and BQ12)

Check proper operation (screen

TROUBLESHOOTING

FAILURE NUMBER	REASON	REPAIR
E 13	Time for the adjustment of the thread tension position of the table is over - when adjusting the basic position	Check proper operation (screen “Inputs test”) and position (0.3 mm from shutter) of sensors of the basic position (BQ3 for thread tension, BQ4 for vertical axis of the chuck, BQ5 for button loader, BQ6 for horizontal axis of the chuck), operation and proper connection of the motor (“Button loading motor test”)
E 14	Time for adjustment of the position of vertical axis of the chuck is over - when adjusting the basic position	
E 15	Time for adjustment of the position of horizontal axis of the chuck is over - when adjusting the basic position	
E 16	Time for the adjustment of the button loader is over - when adjusting the basic position	
E 20	Servo drive failure	Check the error message of the servo drive
E 25	Recovery time of servo drive - after switching on the machine or after pressing the emergency stop button	Wait until the error disappears (max. 11 sec.)
E 30	Thread tension failure during sewing - tensioning mechanism did not reach the position in desired time for safe transfer of upper looper	Check proper operation of thread tensioning mechanism, sensor and shutter for the basic position
E 31	Jaws turning failure during sewing - jaws did not turn into horizontal or vertical position	Check jaws turning mechanism (cylinder, vent and hoses) and sensors placed on cylinder (BQ8 and BQ9)
E 80	Communication error PLC	Check communication cable between PLC-A and PLC-B into the electric box and if both PLS are in RUN mode (signalized by to lit green LEDs on PLC)
E 99	Emergency stop	Release the emergency stop button, event. check its operation on the screen “Inputs test” (SA1)

TROUBLESHOOTING

4. ERROR MESSAGES OF THE SERVO DRIVE (FAULT 20)

A 10	Undervoltage in supply voltage	Check the voltage in the mains
A 20	Servo motor encoder failure	Check the proper connection of connectors of the servo motor and if the cable of the servo motor connection is not damaged
A 32	Overvoltage	Check if the cable of the servo motor connection is not damaged
A 33	Overvoltage in supply voltage	Check the voltage in the mains
E 50	Mechanical overloading	Check the proper connection of connectors of the servo motor and if the cable of the servo motor connection is not damaged and if the sewing mechanism is not mechanically blocked

5. ELETRIC FAULTS

FAULT DESCRIPTION	FAULT LOCATION	FAULT ELIMINATION
After switching the machine on the display, the fan in the cabinet and the working lights do not work	No supply voltage	Check the connection of the mains fork, eventually the voltage in socket
	Faulty power supply switch **QS1**	Replace switch 06.7100.0.047
Only working light does not work	Blown fuse **F9** (T315mA)	Replace the fuse 12.0008.4.062
	Disconnected cable	Check the circuit of light
Only the cross marker does not work	Blown fuse **F1** (T1A)	Replace the fuse 12.0008.4.063
	Disconnected cable	Check the circuit
Machine display, fan in the cabinet, active sensors do not work	Blown fuse **F2** (T5A)+B40	Replace the fuse 12.0008.4.109
Active sensors on the machine, both PLCs in control cabinet do not work	Faulty power supply **GS1**	Replace the supply 12.0008.4.568
		Check +24V for X1:1 to X1:8
Display on the machine, turned on air vents do not work	Faulty power supply **GS2**	Replace the supply 12.0008.4.568
		Check +24V for X1:9 to X1:11
	Warning! Supplies GS1 and GS2 are identical. In case of short circuit in the feed line +24V they automatically switch off. Therefore we recommend disconnecting the conductor no. 50 /GS1/ or no. 52 / GS2/ before their replacement and testing their proper operation so you can avoid a short circuit or overloading in the machine cabling of the connected device.	

Replace **TB2** - 12.0010.4.136

TROUBLESHOOTING

FAULT DESCRIPTION	FAULT LOCATION	FAULT ELIMINATION
Display on the machine does not work	Disconnected wire of the display	Check display connection
	Faulty display	Replace display 71.8000.0.003
	Faulty communication block	Replace block 12.0010.4.119
Stepping motors not in their position and do not work Contactor KM1 do not switch	Pressed Emergency stop	Switch off Emergency stop
	Faulty Emergency stop	Replace button 12.0010.4.122
	Faulty contactor	Replace contactor 12.0008.4.833
Stepping motors not in their position and do not work Motor drivers do not work. Indicators CB1 do not work.	**Blown fuse F3** (T10A)	Replace fuse 12.0008.4.664
	Faulty contactor **KM1**	Replace fuse 12.0008.4.833
	Blown fuse **F5** (T10A)	Replace fuse 12.0008.4.664
	Blown fuse **F6** (T10A)	Replace fuse 12.0008.4.664
One of stepping motors does not work	Faulty driver	Replace driver 12.0008.4.898 !
	Faulty driver control	Necessary to adjust driver properly!
	Faulty stepping motor	Check respective outputs from PLC to driver
		Replace motor
Drivers U5 and U6 do not switch	Faulty switch **TB2**	Replace **TB2** - 12.0010.4.136
Sewing motor does not work. Driver U10 does not work	Blown fuse **F4** (T10A)	Replace the fuse 12.0008.4.664
	Faulty contactor **KM1**	Replace contactor 12.0008.4.833
	Faulty servo driver	Replace servo driver 71.8000.0.004
Sewing motor does not work. Driver U10 switched on	Faulty switch **TB2**	Replace **TB2** - 12.0010.4.136
	Error message on driver display	Steps acording error message
	Faulty servo motor	Replace servo motor 06.7100.0.015
Warning! During checks of stepping motors and servo drive use test avaitable from the menu on display		

TROUBLESHOOTING

FAULT DESCRIPTION	FAULT LOCATION	FAULT ELIMINATION
Active sensors on machine do not work	No voltage on terminal **TB1**	Repair the supply circuit **TB1**
One of the sensors on the machine does not work	Faulty adjustment of sensor shutter	Proper adjustment of shutter
	Faulty cabling of sensor	Repair cabling
	Faulty sensor	Replace sensor
	Warning! During checks of sensors use intups tests available from the menu on display	
Some air vents work do not work	Faulty conection on minus pole	Check connections X4 and X1:18
One air vent does not work	Faulty cabling of vent	Repair cabling
	Faulty vent	Replace vent
	Warning! During checks of vents use outputs tests available from the menu on display	

Caution! Non-profesional works on electric installation can irreversible changes and damages on the machine. The manufacturer not responsible for these works and for the warranty of the machine.

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